

# BACTERIOLOGICAL NEWS

*Society of American Bacteriologists*

OFFICE OF THE  
EXECUTIVE SECRETARY

19875 MACK AVE.  
DETROIT 36,  
MICH.

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NUMBER 2

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## Council Policy Committee:

P. R. Edwards	C. A. Evans, <i>Chairman</i>	E. M. Foster, <i>Secretary</i>	H. R. Cox
	J. H. Bailey	J. R. Porter	
J. H. Hanks (1960)	C. F. Niven, Jr. (1961)	Orville Wyss (1962)	

## Ex officio Members

J. R. Porter, Editor-in-Chief, *Journal of Bacteriology*; H. W. Scherp, Editor-in-Chief, *BACTERIOLOGICAL REVIEWS*; H. B. Woodruff, Editor-in-Chief, *Applied Microbiology*; M. W. Chase, Chairman of the Program Committee; R. P. Williams, Chairman of the Division of General Bacteriology; A. P. McKee, Chairman of the Division of Medical Bacteriology, Immunology and Virology; K. L. Smiley, Chairman of the Division of Agricultural and Industrial Bacteriology; A. F. Brodie, Chairman of the Division of Bacterial Physiology.

## SOCIETY AFFAIRS

### SPECIAL NOTICE

#### NO MEMBERSHIP CARDS IN 1960

A few of our members may be wondering why they have not received a membership card for 1960. The original purpose of the membership card was to facilitate registration at those annual meetings not offering pre-registration. The usefulness of this is debatable. Many members failed to bring their cards to the meeting and others had not received them because dues were paid only a few days before the meeting.

At the January 1960 meeting of the Council Policy Committee, the cost of membership card distribution was reviewed. The cost of printing and postage is \$320 and for processing (sorting, changing addresses and mailing) an additional \$280, making a total cost of \$600.

Since most of our members attending the 1960 meeting are expected to pre-register, there is not sufficient need for the cards to justify this large expenditure of our members' dues. Therefore, the

C.P.C. ruled that membership cards would be eliminated for 1960. It is hoped that our members will be in accord with this decision which will allow these funds to be made available for more worthy Society activities.

In 1961, the membership card will again be available but on a different plan. The card will be mailed along with the annual dues bill at a total cost to the Society of approximately \$30. This system has been found acceptable to the members of certain other scientific societies and a plan hoped to be acceptable to all our members will be announced later.

At the 1960 meeting, as in 1959, the Membership Committee will maintain at its booth a file of currently paid members so that members not pre-registered may have their status verified.

If you are planning on attending the Philadelphia meeting, why not pre-register NOW.

#### FINAL INFORMATION ON THE PHILADELPHIA MEETING

##### May 1 through May 5

The 60th Annual Meeting promises to be the largest one in the Society's history. Of the 65 Sessions planned, 50 will accommodate no less than 488 original papers, an increase of 83 over those presented in St. Louis. In addition, there will be 5 evening Symposia, a showing of scientific motion pictures, and 9 special Sessions without taking into account unofficial Round Tables Sessions and other functions. The *Program* with detailed information was scheduled by the printer to be mailed before the end of March and *Bacteriological Proceedings* somewhat later.

If your reservation for accommodations is not made already, you should act at once. Use the room reservation form that was enclosed with the January issue of *Bacteriological News*, or secure one from Daniel J. O'Kane, University of Pennsylvania, Division of Biology, 215 S. 34th Street, Philadelphia.

You may wish to come a day early and attend the meetings scheduled for Saturday, April 30, in the Adelphia Hotel on "Educational and Professional Standards in Microbiology." The *Council on Education and Laboratories* of the American Academy of Microbiology has arranged a fine program to determine the consensus of all microbiologists regarding such standards.

##### Early Registration

The registration desk will open at 2:00 p.m. on Saturday, April 30, on the main floor of the Bellevue-Stratford Hotel in the Viennese Room. It will close at 9:00 p.m., opening again at 10:00 a.m. on Sunday in the Hunt Room on the same floor. If possible, register in advance by the mechanism explained in the January *Bacteriological News* and in the *Program*. If you have not registered in advance, follow the procedure explained in the *Program*.

Free registration is extended only to persons especially invited by the *Program Committee* or by the *President*. It does not apply to persons who are members of the Society or to persons who are offering Scientific Exhibits. If you are entitled to free registration, please present your letter of invitation.

If you are entitled to Graduate Student rates, please present the required letter from your major professor.

##### Plans for the Ladies

The Hostess Committee wishes to remind the wives of members and delegates, and women bacteriologists of the Society about the provisions made for them in the Blue Room on the first floor of the Bellevue-Stratford Hotel. This Hospitality Room will open at 9:00 a.m. on Monday, May 2.

### Sessions Rooms

The facilities for accommodating so many original papers have been provided by Herculean efforts on the part of Harry E. Morton, Chairman of the Local Committee on Arrangements, and L. Joe Berry, Sessions Rooms Chairman. Making full use of two hotels for Scientific Sessions means that members of all Divisions will find their Sessions moving from one hotel to the other. "Squatter's rights" of one Division to a particular room or set of rooms in a particular hotel will not apply. For greatest clarity with regard to hotel and room arrangements, a new "Key to the Program" is offered in the *Program* this year on a trial basis.

Five of the Sessions Rooms are located in the lobby floor, mezzanine, or 1st floor and are easily accessible. The others are located on the 18th floors; for these, due time must be allowed for elevator service in reaching scheduled meetings.

### Salton to be O. N. R. Lecturer

For the fourth consecutive year we are privileged to welcome a prominent microbiologist from beyond our shores. Dr. Milton R. J. Salton, Lecturer at the University of Manchester in England, is being brought to the United States by the Office of Naval Research to appear on the program. Dr. Salton will deliver the opening address on Sunday evening, May 1, on the topic "The Anatomy of the Bacterial Surface." Thereafter, he will participate in our program as his experience and inclinations lead him to make contributions to various Sessions.

Dr. Salton's studies with homogenous preparations of isolated cell walls have provided basic information for understanding the contribution of the cell wall to the biochemical and cellular function of the cell. Although the walls of various microorganisms were found to possess highly individual characteristics, there emerged certain basic similarities between the chemical composition of the cell walls of various microorganisms which could be correlated with the gram staining properties of the whole cells. Dr. Salton has also investigated the interaction of bacteriophage with cell wall preparations and the biochemical nature of the attack on cell walls by certain enzymes.

### Russian Contributors

At the request of the Foreign Relations Department of the USSR State Scientific and Technical Committee, the Program Committee is making arrangements to welcome two Soviet Bacteriologists at the 60th Annual Meeting. At press time, the necessary diplomatic formalities were unresolved. One of the bacteriologists who is expected is Dr. E. G. Afrikian of Erevan, Armenia. His paper is entitled, "The Causal Agents of Bacterial Diseases of Silkworm and Use of Anti-

biotics in Their Control." The second bacteriologist, not yet identified, is expected to contribute to the taxonomy of the aerobic spore-forming bacteria. We look forward with interest to participation by these guests.

### For Virologists

The discovery of the causal agent of Kyasanur Forest Disease will be presented in a 75-minute color film by its maker, Dr. Telford H. Work of the Rockefeller Foundation, as part of the film program to be given on Monday evening, May 2.

### Information for Reserve Officers

In 1959, retirement point credit was authorized for attendance by Army Medical Service Reserve Officers at the sessions of the Annual Meeting. Application for the same privilege has been made this year, and it seems likely that authorization will be granted. Full information will appear in the initial copy of the "Incubator." In 1959, one credit per day could be gained for stated periods of attendance.

### High School and College Science Education

The President has extended special registration privileges to local high school and undergraduate college students and their faculty for Wednesday afternoon, May 4, and Thursday morning, May 5, only. Special badges with a diagonal stripe will be issued, valid only for visits to the Commercial Exhibits in the Bellevue-Stratford and the Scientific Exhibits in the Adelphia Hotel on Wednesday afternoon and Thursday morning, and to a special Wednesday evening reception and program. These badges are not valid for attending the Scientific Sessions.

Dr. L. S. McClung's Committee on Education has arranged a series of meetings revolving about the showing of films of the A.I.B.S. series on Microbiology (Unit II) of particular use to high school and undergraduate college faculty and of decided general interest to all who wish to learn about this new medium of teaching. Programs will be given at 3:30 p.m. on Sunday afternoon, 4:00 p.m. on Tuesday afternoon, on Wednesday afternoon, and at 8:00 p.m. on Wednesday evening. Attendance is open to all who are interested. Registration Badges are not required.

### Round Table Programs

Those Round Tables for which arrangements were completed prior to February are shown in full in the *Program*. Your attention is directed to a consideration of taxonomic problems among *Mycobacteria* (Charles C. Shepard) and *Enterobacteriaceae* (William H. Ewing). An informal Round Table concerning characterization, differentiation, and classification of *Pseudomonas*

and related organisms will be held Tuesday morning, 9:00 a.m., in the Lotus Room, Adelphia Hotel. **Aquatic Microbiology** (Galen E. Jones) will hold a separate session on Wednesday afternoon, May 4. The session is intended to draw together all those interested in the microbiology of natural waters. **Soil Microbiology** (David Pramer) is scheduled to meet for a breakfast on Tuesday morning, and a Round Table on Tuesday afternoon. Microbiologists interested in the activities of the group should contact Dr. David Pramer, Agricultural Experiment Station, Rutgers—The State University, New Brunswick, New Jersey. **Analytical Microbiology** (William Elias) is scheduled for sessions on Tuesday morning, and on Wednesday morning and afternoon. The information in the *Program* supplements the information contained in the January issue of *Bacteriological News* regarding the program on **Vitamins and on Antiseptics and Disinfectants** and lists the full program of the panel on **Antibiotics**. A Round Table on **Methods for the Examination of Dairy Products** (Luther A. Black) will be held on Wednesday morning. Dr. Stanley E. Hartsell is convening a session on **Lysozyme**, also on Wednesday morning. The times and locations of several additional sessions will appear in "The Incubator." Persons interested in participating in a Round Table on **Intestinal Microbiology** are asked to contact Ralph Wiseman, University of Kentucky, Lexington. A session entitled **Changing Picture of Urinary Infections Involving Gram-Negative Organisms** will be convened by A. J. Weil. **Bacterial Toxins** will be the subject of a session convened by D. A. Boroff.

#### Employment Bureau

The Employment Bureau will be located in the Academy and Assembly Rooms under the direction of the Executive Secretary, Miss Mildred Schwartznau of the Headquarters Staff, and members of the Employment Bureau Advisory Committee will be available to assist registrants and employers. Office hours will be from 9:00 a.m. to noon and from 1:30 p.m. to 4:30 p.m. Monday through Thursday, May 2 to 5.

Bacteriologists interested in employment opportunities are urged to register with the Bureau in advance of the meetings so that their records will be immediately available to employers. For this purpose write Employment Bureau, Society of American Bacteriologists, 19875 Mack Avenue, Detroit 36, Michigan.

All applicants who attend the meetings should register with the Employment Bureau early Monday, May 2, to receive information about scheduling of interviews. Descriptions of available positions will be posted for the use of registrants.

Employers are also urged to register available

positions with the Bureau in advance of the meeting and to provide a description of each position, candidate requirements, salary range, location of position, and the names of supervisors who will be available at the meetings to interview registrants. Available fellowships, grants, assistantships, summer positions, etc. can also be registered by employers.

Employers who desire bacteriologists for their staff vacancies are invited to inspect the personal data of applicants and arrange for interviews. The Bureau will arrange for interviews at mutually convenient times. Facilities will be available for interviews.

#### SECRETARY'S REPORT

In your Secretary's opinion, though his viewpoint admittedly may be biased, there is no question about the major event in the Society's activities during 1959—our National Headquarters Office became a reality. Authorized at the Annual Meeting in 1958, the Headquarters was over a year in gestation. Months of searching for the right man to serve as Executive Secretary culminated in the decision at St. Louis to employ Raymond W. Sarber, a long-time faithful and loyal member of the Society. Mr. Sarber began full-time service as Executive Secretary on July 1, 1959. He promptly established an office in Detroit, employed clerical assistance, and assumed responsibility for management of routine Society services on August 1. (Formerly these services were purchased from the Williams & Wilkins Co.)

While learning and performing the routine operations of the Society, Headquarters personnel have taken on additional jobs as well. The Employment Bureau has been transferred to Detroit; *Bacteriological News* is prepared there; advertising space in *Bacteriological Proceedings* is sold by the Headquarters staff; and many other tasks too numerous to mention here have been transferred to Mr. Sarber.

Although the Headquarters operations will cost considerably more than our previous arrangement, we certainly should accomplish more. For the first time in its existence the Society now is able to initiate and prosecute programs that could not be done before simply because there was nobody to do the work. The impact of the Headquarters on getting things done already is being felt.

The Society's pattern of excellent and well attended meetings was continued in 1959. Our hosts in St. Louis made optimal use of their facilities and a highly successful meeting was the result. Nevertheless, a serious problem of the Society was pointed up when it became necessary for the Program Committee to reject almost one-sixth of the papers submitted so the final



number would fit the available meeting rooms. Although facilities have been committed to accommodate almost 500 papers in Philadelphia this year, it still was necessary to reject one paper out of twelve submitted for the 1960 meeting. As the Society continues to grow we can expect continued and intensified pressure for meeting room space with the result that our choice of meeting sites will be restricted more and more to only a few cities.

Another important action in 1959 may have a significant influence on growth of the Society and the financial position of our journals. Following a poll of the membership the Council authorized a plan whereby members are offered a choice between the *Journal of Bacteriology* and *Applied Microbiology*, or they can receive both on payment of only \$5 in addition to the regular dues. The plan became effective in 1960 and thus far the results have indicated that only 14% are dropping the *Journal of Bacteriology* while 23% are taking both journals. (The poll indicated that 19% would drop the *Journal* and 33% would take both.) It is too early yet to assess the total impact of the journal choice on number of members and financial status of the journals.

In connection with our publications it should be pointed out that the Society continues to face a real problem with the demand for space in the *Journal of Bacteriology*. When it was founded the *Journal* provided almost two pages per member. Now, with research funds more plentiful and the volume of publishable material much greater, the *Journal* has only one-fourth of a page per member. The net result is a steadily mounting pressure for space. With a limit on the number of pages available, and in spite of a current rejection rate of 25%, the backlog of unpublished papers continues to grow. For 1959 arrangements were made with the publisher to print 300 extra pages, but this was not enough. The backlog at the end of the year was greater than at the beginning (see Dr. Porter's report elsewhere in this issue).

Publication of additional pages is mainly a matter of money. Dr. Porter estimates that it would require 600 additional pages annually to reduce the publication time of manuscripts from present 6-7 months to 4-5 months. At current rates this would cost approximately \$30,000. It is clear that the time has come when something must be done if the *Journal of Bacteriology* is to serve its purposes.

Helping greatly to reduce the Society's financial problems while at the same time increasing the pressure for space at the Annual Meeting and in our publications, has been the continued growth of the membership. Through the vigorous efforts of the Membership Committee, some of the local branches, and countless individuals, 1959 saw a

net increase of over 500 in our active membership. This increase came about not only by the acquisition of new members but also by the extraordinarily high renewal rate of old members. Only 3% of the 1958 members failed to renew their membership for 1959. Equally important in many respects was the increase in number of Sustaining Members in 1959. The total membership at the close of 1959 was 6070 representing a 10 per cent net increase over 1958. Details of the membership growth are given in the table in the Membership Committee report elsewhere in this issue.

Other major changes in 1959 saw the approval of a plan for Student Membership and establishment of a requirement that new regular members must have a bachelor's degree or the equivalent in training and experience. It is too early yet to determine whether these changes will have a material influence on the membership of the Society.

During 1959 the Society greatly accelerated its activities directed toward telling others about bacteriology and encouraging youngsters to become interested in microorganisms. Over 10,000 copies of the brochure "A Career in Bacteriology" were distributed during the year. Citations and letters of commendation were sent to over 100 youngsters and their sponsors who prepared award-winning exhibits at science fairs. The Committee on Education prepared a set of teaching aids for distribution to teachers in secondary schools. The material comprised lists of reference materials, films on bacteriology, suppliers of laboratory equipment and even lists of experiments that can be done in science classes. Over 1,200 copies of the material were distributed in 1959, almost all of them in response to individual requests and many from far-away lands. The demand for the lists has been remarkable and plans are under way for a much wider distribution in 1960.

As one looks back at 1959 it is difficult to select those events that should be reported. Much more information will appear in the committee reports to be published in the August issue of *Bacteriological News*. Whereas we still face many serious problems, one who has wrestled with them for several years can only feel encouragement. There is an obvious resurgence of interest in Society affairs. It is most gratifying to find that members, almost without exception, are enthusiastic and willing to work for the betterment of our Society, our profession and our science. If this spirit of cooperation and loyalty can be continued our Society should have little difficulty in achieving its objectives and performing a continuing useful function in the scientific community.

E. M. FOSTER  
Secretary

## REPORT OF THE TREASURER

The financial condition of the Society during 1959 continued to be satisfactory despite considerable expense incurred in establishing the headquarter's office. The balance sheet shows cash \$58,311.87, and total assets of \$248,459.42, an increase of \$37,513.46 over 1958. Liabilities were \$58,508.87. Surplus amounted to \$124,561.89. Disbursements for the year amounted to \$184,384.83, which was \$20,674.13 more than the \$163,710.70 income received. Over 70 thousand dollars was expended for purchase of assets. A summary of income and expenses and balance sheet are included.

The Society's publications experienced a satisfactory year, with the exception of Applied Microbiology which showed a net loss of \$871.45. The statements for J.B.-B.R. and Applied Microbiology are shown in Schedules A and B respectively. The Manual of Microbiological Methods continued to be in demand, royalties from this publication amounted to \$1399.55 for the year.

During the year 16 President's Fellowships were awarded. One Fellowship was cancelled because of construction at the laboratory where the Fellow intended to work. The Fellows and amounts awarded are shown in Schedule C.

The Committee on the Taxonomy of the Actinomycetes made six grants totalling \$16,750 from their funds during the year (schedule D), leaving a balance of \$16,601 for future work in this important field. This balance is carried as a reserve on the balance sheet.

The establishment and operation of the headquarter's office has been an expensive operation. However, several items that go into this venture are nonrecurring expenditures such as furniture, office equipment and prepaid insurance. Nevertheless, the operation of this office, based upon the experience of the last five months of the year and projected for 1960, will entail an annual expenditure of some \$30,000. To meet this expense 5900 members' and 100 sustaining members' dues would be required. The income from the Society's investments during 1959 was about 25% of the estimated cost of operating the headquarter's office.

The steps that have been taken to lessen the financial burden of the headquarter's to the members include discounting of the rental of the office space by making annual rather than monthly payments and payment of insurance and rental payments through purchase, for that purpose, of U.S. Treasury bills and securities at a discount. Furthermore, the Society was able to keep a considerable portion of its cash in high interest bearing U.S. Treasury bills rather than in bank accounts. The business outlook at present indicates that this source of income will not be available to the Society during 1960.

JOHN HAYS BAILEY  
Treasurer

## SOCIETY OF AMERICAN BACTERIOLOGISTS INCOME AND EXPENSE 1959

Balance Dec. 31, 1958: Checking.....	\$9,981.44
Savings.....	69,004.56
	<hr/>
	\$78,986.00

### Income:

Dues.....	\$107,499.75
Assessment, Int'nat. Congress.....	1,623.70
Interest and Dividends, Income.....	7,943.68
Grants.....	21,000.00
Annual Meeting, 1959.....	9,499.74
Placement Committee.....	2,922.40
Publications.....	11,494.08
Mail Lists.....	1,731.61
Sundry (Dr).....	(4.26)

\$163,710.70

Total Income.....\$242,696.70

### Disbursements:

Journal Subscriptions..	32,000.75
Officer's Office Expense	3,086.24
Lilly Award.....	1,000.00
President's Fellowships	5,671.00
Actinomycetes Grants..	16,750.00
Annual Meeting, 1959..	10,091.42
Applied Microbiology..	1,093.00
Mail List Expense.....	933.81
Bacteriological News..	5,434.93
Miscellaneous Publications.....	1,086.94
Headquarter's Expense	34,075.73
Society Travel Expense	584.88
J.B.-B.R. Expense.....	48.12
Membership Committee.....	597.64
Placement Committee..	109.52
Program Committee.....	1,127.20
Committee on Education.....	77.83
Committee on Visual Aids.....	96.00
Archives Committee.....	1.74
Committee on Tax. on Actinomycetes.....	766.12
President's Fellowship Committee.....	10.15
Legal Fees.....	25.00
Membership in Sci. Societies.....	357.78
U.S. Treasury Bills.....	59,241.28
Securities.....	11,150.25
Reserves for Rent and Insurance.....	990.00

\$184,384.83

Balance 12-31-59: Checking.....	\$17,774.17
Savings.....	40,537.70

\$58,311.87

## SOCIETY OF AMERICAN BACTERIOLOGISTS BALANCE SHEET, DECEMBER 31, 1959

### Assets:

Cash: Checking.....	\$17,774.17
Savings.....	40,537.70

\$58,311.87

U.S. Treasury Bonds (at cost).....	41,729.40	
Utility Bonds (at cost).....	12,694.52	
U.S. Treasury Bills (at cost).....	59,241.28	
Common Stocks (at cost).....	70,139.75	184,436.67

#### Accrued Assets:

Prepaid 1960 Annual Meeting Expense.....	1,876.08	
Prepaid 1961 Annual Meeting Expense.....	500.00	
Prepaid 1960 Office Expense.....	769.50	
Prepaid 1961 Office Expense.....	135.00	
1960 Subscriptions Paid in 1959.....	72.75	
1960 Subscriptions paid in 1958.....	104.00	
1961 Subscriptions paid in 1958.....	8.00	
Furniture and Office Equipment.....	2,245.55	
(less depreciation)		

5,710.88

\$248,459.42

#### Liabilities:

1960 Dues paid in 1959.....	22,274.35
1961 Dues paid in 1959.....	64.00
1961 Dues paid in 1958.....	162.02
1961 Dues paid in 1957.....	15.50
1962 Dues paid in 1959.....	8.00
1963 Dues paid in 1959.....	8.00
1960 Subscriptions.....	35,977.00

58,508.87

#### Reserves:

Grants.....	17,608.66
Others.....	47,780.00

65,388.66

#### Surplus:

Invested capital (at cost).....	124,554.67
Unassigned Surplus.....	7.22

124,561.89

\$248,459.42

NOTE: Market value of invested capital 12-31-59; U.S. Treasury Bonds \$34,929.60; Utility bonds, \$11,352.50; Common Stocks, \$72,914.38; Treasury bills, \$59,508.49 for total market value of \$178,704.97.

#### SCHEDULE A

##### FINANCIAL STATEMENT, 1959

##### JOURNAL OF BACTERIOLOGY AND BACTERIOLOGICAL REVIEWS

JB—Embracing Vol. 77, No. 1, to Vol. 78, No. 6; i.e., 12 issues.

BR—Embracing Vol. 23, No. 1, to Vol. 23, No. 4; i.e., 4 issues.

#### Income:

1. Subscription Sales.....	\$103,564.47
2. Space Sales.....	31,746.06
Total Revenue.....	<u>\$135,310.53</u>

#### Expenditures:

3. Printing Cost of Text.....	\$60,353.11
1758 Pages JB.....	
276 Pages BR.....	10,213.16
2034 Pages.....	70,566.27
Sustaining "M" Pages.....	274.12
	<u>70,292.15</u>
4. Printing Cost of Advertising Section.....	12,667.38
5. Postage.....	6,346.09
6. Mail List.....	2,003.30
7. Editorial Costs.....	10,296.21
8. Back Issue Storage.....	209.46
9. Other Costs: Marketing.....	271.70
10. Overhead Expense.....	18,047.54
Total Expenses.....	<u>120,133.83</u>

Profit-Current Issues.....	15,176.70
11. Back Volume Sales.....	2,092.77

Net Surplus—For Year.....\$17,269.47

50% to SAB.....\$8,634.74

50% to W&W.....\$8,634.73

Gross Operating Revenue from All Sources.....\$137,403.30

#### Paid Subscriptions:

	Active	Susp.
JB "M".....	5855	270
Non-"M".....	3554	302
	<u>9409</u>	<u>572</u>
BR-Non-"M".....	287	62

#### SCHEDULE B

##### FINANCIAL STATEMENT, 1959

##### JOURNAL APPLIED MICROBIOLOGY

Embracing Vol. 7, No. 1, to Vol. 7, No. 6; i.e., 6 issues.

#### Income:

1. Subscription Sales.....	\$16,637.91
2. Space Sales.....	2,454.31
Total Revenue.....	<u>19,092.22</u>

#### Expenditures:

3. Printing Cost of Text 402 Pages.....	\$13,678.96
4. Printing Cost of Advertising Section.....	1,556.13
5. Postage.....	602.70
6. Mail List.....	355.23
7. Editorial Costs.....	1,450.94
8. Back Issue Storage.....	46.80
9. Other Costs: Marketing.....	64.34
10. Overhead Expense.....	4,475.93
Total Expenses.....	<u>22,231.03</u>

Loss-Current Issues.....	-3,138.81
11. Back Volume Sales.....	882.68
12. Permission Fee.....	
13. Reprint Sales 3679.28 Less Printing Cost 2294.60.....	1,384.68
Net-Deficit-For Year.....	<u>-\$871.45</u>

	Active	Susp.
Paid Subscriptions.....	2275	113
Gross Operating Revenue from All Sources.....	\$23,654.18	

## SCHEDULE C

### PRESIDENT'S FELLOWSHIPS

Fellow:	Award
Howard, D. ....	\$600
Bauer, D. ....	280
Sherrard, J. S. ....	230
Myers, W. F. ....	375
Spendlove, R. S. ....	424
Kamer, H. ....	350
Feary, T. ....	200
Newton, J. ....	450
Schrader, G. T. ....	522
MacDonald, R. E. ....	400
Sivak, A. ....	345
Bracket, R. G. ....	200
Anaker, R. L. ....	465
DiCuollo, J. J. ....	360
Reeves, H. ....	530
Total Fellowships.....	\$5671

## SCHEDULE D

### GRANTS BY COMMITTEE ON THE TAXONOMY OF ACTINOMYCETES

U.S. Dept. of Agriculture .....	\$4500
University of Georgia.....	2750
Rutgers The State University.....	2500
Yeshiva University.....	2500
Syracuse University.....	2500
Bergey Trust.....	2000
Total.....	\$16750

## SCHEDULE E

### STOCKS AND BONDS OWNED BY THE SOCIETY

<i>Common Stocks:</i>	
200 Boston Edison.....	\$10,384.51
50 Bendix Aviation.....	2,927.68
83 Douglas Aircraft.....	7,056.28
100 General Motors.....	4,625.59
100 Kennecott Copper.....	11,150.25
200 Niagara Mohawk Power.....	6,487.43
100 Philadelphia Electric.....	4,174.94
200 Public Service Electric and Gas.....	6,173.22
100 Sperry Rand.....	2,791.31
200 Standard Oil of New Jersey.....	10,245.63
100 F. W. Woolworth.....	4,763.63
	\$70,780.47
<i>Bonds:</i>	
17,200 U.S. Treasury 2½%.....	\$16,423.78
21,000 U.S. Treasury 3%.....	20,293.69
5,000 U.S. Treasury 3½%.....	5,002.93
5,000 Conn. Power and Light 3½%.....	5,107.74
7,000 Dayton Power and Light 5%.....	7,586.78
	\$54,414.92

## APPLIED MICROBIOLOGY

### Annual Report 1959

In 1959, Volume 7 of *Applied Microbiology* was published. As in former years, the reports of

research on the applied aspect of microbiology covered a wide range of topics. In addition, reviews of subjects of broad interest were published as Microbiological Process Reports or Microbiological Process Discussions. A classification of papers published by subject matter is given below.

Subject	Papers Published in 1959
Microbiology of food products.....	17
Fermentation and bioengineering.....	13
Methods and techniques.....	11
Microbial physiology related to applied processes.....	10
Deterioration and preservation.....	5
Antibiotics.....	5
Germicides and disinfectants.....	4
Microbial genetics related to applied processes.....	4
Culture identification and preservation.....	3
Microbiology of industrial products (nonfermentation).....	3
Microbiology of water and sanitation processes.....	2
Rumen microbiology.....	2
Soil microbiology.....	2

The twenty-five members of the Editorial Board have been of great help to the editor in evaluating manuscripts and have spent much time in making specific suggestions for improvements in some manuscripts. In addition, specialists not included on the Board have given valuable assistance in judging certain papers. The members of the editor's staff, Dr. B. M. Miller, Mrs. Mary Ann Reagan, and Miss Matilda Heisch, have contributed greatly to the equality of the journal.

Through our system of rotation, five of the members of the Editorial Board retired from service on *Applied Microbiology* with the completion of Volume 7. These are Miss Dorothy I. Fennell, Mr. J. J. Gavin, Dr. P. F. Klens, Dr. W. L. Mallmann, and Dr. R. L. Stedman. New members have been selected for the Board to maintain approximately equivalent representation from university, industrial, and government or institutional laboratories. Experts in various fields of microbiology have been included on the Board, based on areas covered by papers previously published in the journal. The members of the Editorial Board appointed for 1960-1964 are Drs. F. W. Barber, E. O. Dillingham, R. N. Doetsch, W. Litsky and J. F. Murphy.

The following tabulation shows the number of papers received prior to December 31, 1959, their disposition, and a comparison with similar data for 1958.

	1958	1959
Number of manuscripts received for publication during year.....	100	122
Number of manuscripts accepted.....	71	86
Number of manuscripts rejected.....	24	17
Number of manuscripts withdrawn.....	—	1
Number of manuscripts under consideration.....	5	23
Number of manuscripts returned to authors for correction or modification..	14	23
Number of papers published.....	84	81
Backlog of accepted papers awaiting publication.....	42	47
Pages printed.....	440	396

The following tabulation shows the expenditures of the editorial office during 1959.

<i>Income:</i>	
Balance on hand January 1, 1959.	\$895.00
Received from Williams & Wilkins.....	500.00
Interest.....	32.32
Total.....	\$1427.32
<i>Expenditures:</i>	
Secretarial and editorial assistants.....	75.00
Postage, office supplies, etc.....	74.00
Travel to official meetings.....	212.94
Total.....	\$361.94
Balance on hand December 31, 1959.....	\$1065.38

H. B. WOODRUFF, *Editor*

## BACTERIOLOGICAL REVIEWS

### Annual Report 1959

During 1959, *Bacteriological Reviews* published 18 reviews occupying 272 of the quota of 280 pages and representing well the Divisions of the Society, broadly interpreted. Much depends on the reader's point of view. For example, the "Symposium on the Biology of Cells Modified by Viruses or Antigens" published in the December number, was sponsored by the Medical Division, yet the constituent papers clearly deal with cellular physiology and metabolism. Similarly, the "Symposium on Initiation of Bacterial Growth" was sponsored by the Agricultural and Industrial Division but the subject matter was essentially pure physiology. Is the review on "Bacterial Species of the Rumen" General or Agricultural (or Industrial)? Are "Studies on the Arizona Group of *Enterobacteriaceae*" Medical or General?

Arrangements have been consummated to publish the proceedings of a "Symposium on Non-specific Resistance to Infection," sponsored by the U. S. Army Chemical Corps, Fort Detrick, as an expanded issue for March 1960. At the close

of 1959, four other accepted manuscripts were on hand, three were undergoing revision by their authors, and an impressive number of more or less reliable promises were on file. Experience shows, however, that a sizable fraction of the latter will never come to fruition and that delivery on the rest is entirely unpredictable. The Editor, therefore, once more calls attention to the standing invitation that appears in the front of each number of *Bacteriological Reviews* and solicits suggestions for timely reviews of neglected areas, (accompanied if possible with suggestions of qualified reviewers), from all interested parties, whether prospective authors or not.

### Financial Statement

#### Receipts:

Cash balance forwarded	
1 January 1959.....	\$150.54
Postage on hand 1 January 1959.....	6.20
Received from the Williams & Wilkins Co....	600.00
	<hr/>
	\$756.74

#### Expenditures:

Secretarial assistance....	\$320.00
Annual Meeting travel..	174.80
Postage.....	57.17
Miscellaneous.....	41.53
	<hr/>
	\$593.50
Postage on hand 31 December 1959.	12.58
Cash Balance on hand, 31 December 1959.....	150.66
	<hr/>
	\$756.74

HENRY W. SCHERP, *Editor*

## JOURNAL OF BACTERIOLOGY

### Annual Report 1959

Six members (H. A. Barker, G. Bertani, Werner Braun, J. L. Etchells, C. E. van Rooyen, and Guy P. Youmans) of the Editorial Board completed their terms in 1959. One member (R. Y. Stanier) asked to be relieved because of other duties. These members have devoted a great deal of time and effort to the *Journal*, and it is a pleasure to thank them for their help.

The first tabulation shows the distribution of manuscripts and other data on papers published during the past two years. Nine more new manuscripts were received, and 50 more papers were published in 1959 than in 1958. But these two facts did not reduce the backlog of manuscripts awaiting publication; there were 116 manuscripts awaiting publication in 1958, whereas in 1959 there were 152.

As in the past, many authors have not paid sufficient attention to the style of the *Journal*, and, as a result, many manuscripts had to be



returned for modification. Approximately 25 per cent of the manuscripts submitted in 1959 had to be rejected.

The second tabulation shows the allocations and expenditures in the Editorial Office for the past two years. Expenses will be more next year, especially if another bill increasing postage should be passed by Congress. Every effort is being made to keep down expenses.

	1958	1959
Number of manuscripts held over and under consideration January 1.....	50	68
Number of manuscripts received during year.....	431	439
Number of manuscripts accepted during year.....	267*	326†
Number of manuscripts returned to authors for correction or modification.....	138	124
Number of manuscripts rejected during year.....	130‡	111§
Number of articles published during year.....	247	297¶
Number of illustrations		
Tables.....	646	744
Linecuts.....	403	443
Halftones.....	151	199
Number of manuscripts accepted and awaiting publication.....	116	152
Number of manuscripts under consideration December 31.....	68**	55††

\* Includes 28 originally submitted in 1957.

† Includes 41 originally submitted in 1958.

‡ Includes 11 originally submitted in 1957; 4 withdrawn by authors; 2 transferred to other journals; 11 in hands of authors to be modified and not resubmitted.

§ Includes 18 originally submitted in 1958; 1 transferred to another journal; 2 withdrawn by authors; 11 returned to authors for modification and not resubmitted.

|| 1390 pages, excluding indexes.

¶ 1699 pages, excluding indexes.

\*\* Comprises 26 in hands of reviewers; 14 in hands of authors for modification; 28 in editorial office.

†† Comprises 29 in hands of reviewers; 13 in hands of authors for modification; 13 in editorial office.

	1958	1959
<b>Income:</b>		
Balance on hand January 1....	\$935.41	\$863.95
Received from Williams & Wilkins Company.....	5000.00	5000.00
<b>Total.....</b>	<b>\$5935.41</b>	<b>\$5863.95</b>

#### Expenditures:

Editorial Assistant, Social Security, Group Insurance, etc.....	\$3924.41	\$4197.60
Postage, binding of journals, office supplies, etc.....	1147.05	1249.18
<b>Total.....</b>	<b>\$5071.46</b>	<b>\$5446.78</b>
<b>Balance on hand December 31.....</b>	<b>\$ 863.95</b>	<b>\$ 417.17</b>

J. R. PORTER, *Editor*

### A REPORT ON MEMBERSHIP

The Society's membership is growing steadily. Thanks are due to the Membership Committee, the local branches and many bacteriologists throughout the country. Through their combined efforts this growth has been made possible. Only by the fullest cooperation of all the Society's members can we expect this growth to continue through 1960. Looking back over the records we see a significant growth (283) in 1958 over 1957. Still more encouraging was the increase in 1959, when over 700 new members were added to our rolls. From the looks of things we are off to an excellent start in 1960. Our Executive Secretary reports that applications for membership are arriving each day.

The following chart gives a comparison of the growth of the various types of membership from 1957 through 1959. The figures for 1957 and 1958 are from the Secretary's Report as it appeared in the April, 1959 issue of the *News*.

	1957	1958	1959
Active members (total).....	5035	5318	5862
New.....	412	551	727
% of members new.....	8.2	10.4	14
Non-renewal rate*.....	8.9	5.3	3
Sustaining members†.....	70	78	92
Corresponding members.....	7	7	7
Retired members.....	9	9	7
Emeritus members.....	70	85	99
Honorary members.....	1	1	3
<b>Grand total.....</b>	<b>5192</b>	<b>5497</b>	<b>6070</b>

\* Per cent of members for preceding year that did not renew for year shown.

† Total sustaining members paid for 1960 on March 1—99.

In the November *News* we reported six new sustaining members. You will be pleased to know that since that report fourteen new companies have joined our Society:

American Scientific Laboratories, Inc.  
Carworth Farms, Inc.  
Colorado Serum Company  
Swift & Company

Coulter Electronics, Inc.  
 Dow Chemical Company  
 Nitragin Company, Inc.  
 Philip Morris Company  
 Procter and Gamble Company  
 Scientific Glass Apparatus Company  
 Vico Products Company  
 Acme Metal Products Inc.  
 G. D. Searle & Company  
 Pitman-Moore Company

With the addition of these fourteen new members the total number of sustaining members at this moment is 99. There are still many more companies that could derive great benefits by becoming associated with our Society. There may be several in your locality. Won't you take a moment and submit these names to me today? Or better yet, Sustaining Member brochures are available from the business office, you secretary or the various members of the committee. These contain the advantages of membership as well as an application blank. Why not request copies today, then approach these potential members directly or through a contact within the company. The Society would appreciate your efforts and the job of the Membership Committee would thus be made a great deal easier. Several members have followed this approach and the Society has benefited by their efforts.

The figures presented here are encouraging to say the least and give us a great deal of satisfaction. However, there are still many bacteriologists in university, industry and public health laboratories who qualify for membership under the new regulations. It has been demonstrated on numerous occasions that all these people need in the way of encouragement is an invitation by you to become affiliated with the Society. You will find a convenient application blank on the last page of your *News*. Won't you use it today?

DONALD E. SHAY, *Chairman*  
 Membership Committee

#### ROUND TABLES AT ANNUAL MEETINGS

Some years ago, the need became apparent for space facilities to which small groups of individuals could retire during the Annual Meetings of the Society and mull over their specialized interests. It was found that some hotels were indeed able to offer a certain amount of further space (beyond the large Sessions Rooms and the several small public spaces that are needed by the Local Committee on Arrangements, by its Publicity Committee, by the Employment Bureau, and so on) in the form of small Public Rooms. Application for use of these small rooms was made to the Round Table Sessions Chairman of the Local Committee on Arrangements by interested persons, often

by Chairmen of the official Committees of the Society.

Upon emergence of the *Analytical Microbiology* and *Soil Microbiology* Sections of the Division of Agricultural and Industrial Bacteriology, a new need arose for meeting areas intermediate in size between regular Sessions Rooms and the previously established Round Tables, with the idea of accommodating as many members of the Society as had special interests in these areas. Some spaces of this size range have been provided during the last four years up to hotel capacity, and varying considerably in size and convenience. Inasmuch as these semi-official meetings did not occur in regular Sessions Rooms, they also came to be called Round Tables despite the difference in purpose and intended audience.

Quite recently, persons have been applying for a Round Table room on a non-official basis but, wishing to open their meetings to the entire membership of the S.A.B., have requested assignment of large rooms. It will be appreciated easily that such requests can not be granted. The Society is now about to start using seven simultaneous Sessions for use of its established Divisions (presently four in number) wherever facilities permit. Clearly, then, the privilege of holding a non-official meeting in a large area and opening it to the general membership would result in a Session that would be competitive with the official Sessions of the Society. This does not appear to be compatible with the Society's interests, as represented by its regularly constituted Divisions. Consequently, non-official requests for Round Tables must be aimed at securing small rooms for limited audiences.

If facilities for regular Sessions Rooms prove to be ample (from the point of view of being able to accommodate more than a reasonable quota of original papers), special types of Sessions become possible. These could take various forms such as Panel Discussions or Symposia-within-a-Division. Each special Session must, however, be organized under and be sponsored by one of the regularly constituted Divisions of the Society.

The *Program* (including assignment of Sessions Rooms among the Divisions) is made up in mid-January by the Program Committee. The titles of Round Tables, Conveners, and Speakers, both semi-official and non-official, will be printed in the *Program* if the information reaches the Program Chairman by the time that Abstracts are due, preferably earlier. All Conveners of Round Tables are privileged to submit to the Executive Secretary, within 3 weeks of the close of an Annual Meeting, text-copy of a report of their meetings for publication in *Bacteriological News*. While such copy will remain subject to editing for style and content,

the means is offered to let the productivity of these sessions become known to all.

So far as is possible, the Program Committee will arrange the scheduling of Round Tables so as to avoid conflicts in time with regular Sessions in which material possessing particular appeal for the same group is to be presented.

Requests for non-official Round Tables for small groups only will be accepted in the usual way. For the Philadelphia meeting this year, such requests are to be addressed to James R. Copeland, Laboratory of Hygiene, Front and Luzerne Streets, Philadelphia 24, Penna.

For the Program Committee  
MERRILL W. CHASE

#### REVISION OF THE CONSTITUTION

The Society's Constitution has undergone only little change since its last major overhaul in 1946. This is a credit to the wisdom and foresight of the committee that planned the 1946 revision. Nevertheless, almost every year reveals a need to alter one or more sections of the Constitution to meet the needs of current operations.

Quite properly, our Constitution is not easy to change. It was made that way deliberately and it should remain that way. Nevertheless, it is the feeling of many that our Constitution is unnecessarily detailed and cumbersome. In the view of some people, including legal advisors, we could operate more effectively if the Constitution were reserved for matters of major policy, and items dealing with less important procedures were transferred to the bylaws. Thus it would be possible to change operating procedures at any Annual Meeting by the usual process of bylaw modification.

With this idea in mind the members at the Business Meeting in St. Louis last year voted to request the President to appoint a committee to consider a thoroughgoing revision of the Constitution. The intent is to transfer as many procedural matters as possible to the bylaws while retaining the basic protective features of the Constitution itself. (See *Bacteriological News*, August, 1959, p. 13). The nucleus of a committee has been appointed by President Evans. This announcement is intended to serve as an invitation to submit ideas for needed revisions in the Constitution. If you feel that certain sections need changing simply send you suggestions to:

E. M. FOSTER  
Secretary, S.A.B.  
311 Bacteriology  
University of Wisconsin  
Madison 6, Wisconsin

#### PRESIDENT'S FELLOWSHIPS

Through the generosity of Difco Laboratories the Society has available funds to support short periods of training in technical procedures useful

in the research of the recipients. The grants are available to members of the Society and are made by the President on the recommendation of the Committee on President's Fellowships. Inquiries should be made to one of the members of the Committee.

R. E. HUNGATE, Dept. of Bacteriology, University of California, Davis, Calif.

ORVILLE WYSS, Dept. of Bacteriology, University of Texas, Austin, Texas

ARTHUR K. SAZ (Chairman), Medical and Physiological Bacteriology Section, Bldg. 5, NIAID, National Institutes of Health, Bethesda 14, Md.

#### ON THE OTHER SIDE OF THE DEADLINE

The establishment of a deadline for the submission of titles and abstracts—this year it was January 8—is one among a series of carefully timed operations. Perhaps it would be useful to indicate what these are, for some members appear to believe that late abstracts can be inserted readily in some yawning filing drawer that is holding abstracts against the arrival of some later calendar date.

Actually what happens is this: abstracts are "processed" as received in every mail, and within 24 hours following the deadline date one copy of each abstract has been sent by airmail to the Chairman of the Division to which the abstract was addressed. Further, when abstracts appear to cover material that would be pertinent to the planning of others among the Division Chairmen, the appropriate titles are mailed in the form of the extra "heading" from the abstract copies. This close timing is necessary to let the Division Chairmen have one week for appraising, editing, and arranging titles into unit half-day Sessions (7 to 12 papers each). Immediately thereafter, the entire Program Committee meets in Detroit and constructs the final program in morning, afternoon and evening sessions until the job is completed. By the time they disband, the full text-copy of the *Program* (completed in every detail, including the author index) must be ready for mailing to the printer.

The printing establishment, which has set up its schedule 6 months in advance, is geared to the receipt of this copy and is awaiting its arrival; the schedule this year called for galley proofs to be pulled by February 5th, with page proofs starting five days later. Because of this speed, the Program and its Author Index must be so constructed that page numbers need not be cited, for time does not permit reworking the text. (The construction of *Bacteriological Proceedings* is on a similarly "tight" and nearly syn-

chronous schedule, excepting that the Subject Index is composed sequentially and page numbers are to be added after page proof is pulled; only then does alphabetization become possible.)

To return to the first deadline, the one for the receipt of abstracts: during the week that the Division Chairmen are studying and preparing Abstracts, the Program Chairman's mail continues to flood in, but now with new burdens: specific details from the Local Committee on Arrangements, requests from Committee Chairmen for the assignment of particular rooms and times for Committee meetings (to be printed in the *Program*, of course), reshuffling of areas to be assigned to certain sessions smaller than the regular Sessions Rooms, the receipt of certain overdue Abstracts of the Symposia often with titles of papers altered and requiring correction of other standing copy, and so on, all to be fitted into revised text-copy that will be taken to the Detroit meeting.

Meanwhile, various assaults—ranging from minor to major—continue to be made on the deadline barrier by well-meaning persons who do not understand the closely timed series of operations that are necessary to get printed copies of the *Program* and of *Bacteriological Proceedings* into their hands well in advance of the Annual Meeting. A telegram sent before midnight on the deadline date gives a title and promises an abstract (it is not put into the mail for another 5 days), abstracts trickle in that have been held up by inadequate postage (average delay: 72 hours) or by ill-timed mailing. One required 4 days to travel 35 blocks northwards within New York City because it was mailed 4th class, illegally at "reprint" rates. These are not unique examples.

The item of most nuisance value is the separate and later mailing of post cards for information of receipt-of-abstract and presentation date by persons who have forgotten to enclose them with their abstracts; the Program Chairman is supposed to find the abstract, affix the card, fill out the receipt card and so on. More graciously received are the telegrams and letters that indicate the discovery of flaws in the text submitted (Why don't people have their abstracts read back to them by monotone-voiced non-bacteriologists before or within one day after they send them in?), for the committal of misinformation to type is abhorred by Program Chairmen.

The meeting of the Program Committee occurs about 11 days after the deadline date for abstracts, during 7 of which the Chairmen of Divisions have been arranging the half-day Sessions. On the third day of the Committee's meeting, a telephone call from New York announces that two more late abstracts have arrived in the office of the Program Chairman. The other members of the Committee look up from their work, frankly incredulous, and then look at their neatly stacked piles of scheduled papers each bearing its final delivery number. Comments, unprintable, may be paraphrased as, "Let them stay in New York."

Finally the message arrives from the printer: all copy of *Bacteriological Proceedings* was received in Baltimore on the morning of January 25th and was in order; all copy for the *Program* had arrived on the afternoon of the 27th, had been checked, and within one day had been put in for production. Yes, yes, we say impatiently, that is already completed... the *present* problem is the Subject Index for *Proceedings*...

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## BACTI NEWS FEATURE

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### THE K-12 SCIENCE PROGRAM

DONALD G. DECKER

*President, National Science Teachers Association*

*Colorado State College, Greeley, Colorado*

Most schools now have some kind of a K-12 program in science. Some science is taught at almost every grade level in all school systems. A K-12 program maintains that which is now good in the science curriculum, but it makes it an integral part of the total program and demands that "gaps" in the program be filled.

What is the K-12 science program? It is the science program in a school from Kindergarten

through the twelfth grade. The program consists of planned subject matter at each grade level and planned experiences by which the students learn that subject matter. The purposes of the program are to help students develop science concepts at each grade level and to help them understand the scientific mode of thinking. As students progress in their study of science, the quality of the concepts they develop should increase, their under-



standing of basic science principles should increase, and their appreciation of the scientific processes should grow.

Why develop a K-12 science program? Science as an important part of the school curriculum began in the senior high school. Later the curriculum of the junior high school, grades 7-8-9, included science. Rather recently it has become an important part of the elementary school curriculum. Due to the historical manner in which it became a part of the total school curriculum, it has been planned as three separate curriculums. In most schools this planning is done without reference to the planning of teachers of other subjects or grade levels. Private agencies and curriculum workers usually plan in terms of specific subjects or grade levels.

The student who is moving through the thirteen years of school experiences a science curriculum that is planned in parts and taught in parts. The result has been a science curriculum in which experiences are duplicated, the student's time is wasted by studying those topics he has already learned, and he is prevented from learning as much as he could learn because it is assumed that he has not learned any science in previous grades. In many schools a student who does not elect biology, chemistry, or physics does not have an opportunity to study science, although many students have special interests in geology, astronomy, meteorology, bacteriology, zoology, botany, and other sciences.

The reason then, for developing a K-12 science program is to plan in terms of the student who is moving through the thirteen years of science. Educators have been encouraged to "look at the whole child" but seldom have they been encouraged to "look at the whole program," which may be equally important. A good science program needs to be developed from the Kindergarten "up through" the twelfth grade, part being an extension of the previous work that the student has had in science. At the present time we do not know how much a student can learn at each grade level. We do believe that he can learn much more than he is given the opportunity to learn at the present

time. We are also quite sure that he knows more as a result of living in a culture predominated by science, than we give him credit for knowing. It may be true that a student in this decade could learn in the first seven years of school, K-6, all that we now try to teach him in the first ten years of school. Some school systems that have tried courses in advanced biology, chemistry, and physics have discovered that students can learn more before they graduate than the science now offered in the first introductory courses in these subjects. From Kindergarten through the twelfth grade, students have had experiences in all fields of science and they would like additional experiences at each grade level. Merely to satisfy these interests we need to offer a broader curriculum in more fields of science. If, in addition, we would like to teach as much as students can learn, we need to offer "harder" science courses and more of them.

What are the advantages of a K-12 program? Groups of teachers from all grade levels can plan for more effective and efficient science teaching when they plan in terms of a total program in which the work of each grade level is an integral part of the work of the entire program. By the time the student has reached the seventh grade, carefully kept records should reveal those students who are most likely to "handle science subject matter well" and should be encouraged to consider a career in the field of pure sciences. These students should have an opportunity to work in pure science courses during their high school years. Many students will enter vocational fields in technology and they should have science courses that will help them prepare for these career interests. Other students will not work in vocations that demand a knowledge of science, but they will be citizens who should have an education in science so that they can be intelligent citizens in their communities and a force in the promotion of the work of the scientists because they understand it.

Students are ready for a better program in science. They will get it!

## HAVE WE CORRUPTED ANOTHER USEFUL TERM?

D. H. FERRIS

*University of Illinois, Urbana Illinois*

Some years ago McCoy (personal communication) pointed out that the use of the verb form "isolate" as a noun to describe a parasitic micro-organism isolated from another organism was unnecessary, as the noun form "isolant" was correct and no more difficult to pronounce or

spell. With the great emphasis today upon clarity and accuracy in scientific writing it would appear that such a correction would be immediately and happily utilized. Such was not the case.

Foster (Ann. N.Y. Acad. Sci. 78: 81) states that we do not have common agreement upon what is



meant by "disease-free" animals, but he confidently writes: "The germfree animal is free of all microorganisms . . ."

Is this growing utilization of "germfree" really desirable or accurate? Are we now sure that all viruses have been eliminated from the so-called "germfree" animals? Most workers in this field will usually admit that "bacteria-free" animals is all that the term can mean as of this date. For many years teachers of hygiene have been carefully explaining that not all bacteria are germs and not all germs are bacteria. The noun "germ" carries the connotation not merely of a microbe, but a harmful microbe. The dictionary definition makes this clear: "germ (jurm). *n.* *L.* a microorganism, esp. when disease-producing: microbe . . ."

"Germfree" is obviously a poor term to use when "microbe and parasite-free" is meant. For this now hypothetical condition we need a really satisfactory term of accurate etymological derivation. Since this state has not really been achieved it is in the more practical area that a useful term is needed. From Foster, Dolowy (personal communication) and others we find that there is little common agreement on "disease-free", "pathogen-free", "specific pathogen-free" or "animals free of commonly occurring pathogens and parasites". We know today that a pathogen may be found

in an organism without causing disease. We know that the so-called "normal" flora and fauna of an animal may at times cause disease. We also, today, do not consider nematodes, protozoa and blood sucking insects as the only "parasites". Viruses, bacteria, fungi, and in fact, any organism living in or on another, exhibit some degree of "parasitism". It is therefore redundant to speak of "pathogens and parasites".

For this catch-all arena where we talk of "disease-free" or "pathogen-free" animals there is a reasonably good catch-all term—"germfree". Since the time of Pasteur and Lister, "germ" has had a somewhat vague and ill-defined, but nevertheless well-understood meaning. If one "picks up a germ", it has no reference to whether or not he is free of his natural body cavity inhabitants—he has picked up (or activated) some harmful organism be it a trichina, streptococcus or polio virus. Since most of the macroparasites are transmitted or acquired in a microscopic stage this term would not be stretched any further to include these than it is now contracted to mean "free of all microorganisms".

Should the principle of priority not hold for common words? Or does the preemption by a few scientists of such a crude term mean that the rest of the English-speaking world must change?

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## NEWS AND ANNOUNCEMENTS

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### DEPARTMENT AND DEGREE SURVEY AVAILABLE

The Society's office is often asked for information on which colleges and universities offer bacteriology or microbiology and which degrees are offered. During the past months the Headquarters Office has conducted a survey to make this information available. A list of 181 departments in 127 schools in 48 states has been compiled. Information includes the name of the school and department, person in charge, address, and degrees offered. It is believed that this is one of the most complete listings available and should be of interest to administrators, guidance counselors and Society members interested in graduate work or career promotion. The survey may be obtained by remitting fifty cents to the Society's Headquarters office. Copies will also be available at the Philadelphia meeting at the Information Desk and Committee on Education Exhibit.

### MEMBERS LOST OR STRAYED

The Society's office continues its efforts to locate the correct addresses of some of its members. We

did very well with the first list that appeared in the *News* and very poorly with the second list. As long as these members are "missing" your Society is losing their dues and the missing ones are losing journals. Surely someone knows where these members are! Won't you please check the following list and send in a postcard with any helpful information?

Blakey, Billy R., 1103 South West 7th Avenue,  
Gainesville, Florida

Collings, Lt. William S., 2371 Kenton, Aurora,  
Colorado

Dolin, Morton I., PO Box Y, Biology Div., Oak  
Ridge Nat'l Lab., Oak Ridge, Tenn.

Donch, John J., 230 Third St., Davis, Calif.

Durand, Rene R., 1825 Francisco, Berkeley,  
Calif.

Fisher, Capt. Oliver L., Box 484 Hq. AMC,  
Wright-Patterson AFB, Ohio

Fu, Jacqueline C., 321 W. 8th St., Apt. 1F, New  
York, N. Y.

Gurley, Caroline R., 3241 N. St. NW, Washing-  
ton, D. C.

Mayshak, Patricia L., Nesmith Hall, Univ. Of  
New Hampshire, Durham, N. H.

Midlige, Jr., Frederick H., 11 West 4th St., Bethlehem, Pa.  
 Pinzelik, John, 102-16 West State St., West Lafayette, Ind.  
 Price, Troy S., PO Box, 178 34 Main St., Durham, N. H.  
 Sappington, S. W., Box 528, Bryn Mawr, Pa.  
 Savage, Wm. G., Woodrom Mead, Corfe, Taunton, England  
 Weimer, Charles R., Dept. of Bacteriology, Indiana Univ. Bloomington, Ind.

#### YOUR LAST NEWS?

#### PAY 1960 DUES NOW

Did you fail to receive your journals in February and March? If your answer to this question is yes, then this issue of the *News* is actually a gift to you and the last you will receive unless you pay your 1960 dues.

After the mailing of the January issues of the journals, all members whose dues have not been received are declared delinquent and their names withdrawn from journal mailing lists. We have, however, had these names retained for this issue of the *News* because we believe it is so full of interesting Society news and other features that all bacteriologists should have the chance to read it.

Now that your income tax is paid, why not send in your 1960 dues today? Your Society and profession needs your support, and you need the support of the Society. Just a word of warning: Back issues are still available, but last year some members waited too long to pay their dues and could not be supplied all numbers of the journals. Remember you will get your choice of *Journal of Bacteriology* or *Applied Microbiology*, as well as *Bacteriological Proceedings*, *Bacteriological News* and *Bacteriological Reviews*. The March issue of *Bacteriological Reviews* (over 200 pages) contains the complete proceedings to the Fort Detrick Symposium "Nonspecific Resistance to Infection."

Write that check today!

#### BACTERIOLOGY TEACHING AID LISTS

The response to the availability of the teaching aids prepared by the SAB Committee on Education quickly exhausted the original edition of 1300 copies. These aids included lists of references to the use of microorganisms in introductory biology, reference books, articles on microbiology in *Scientific American*, films, experiment suggestions, etc. To make these aids more freely available, arrangements are now being completed to publish the material, together with a small number of related manuscripts, as a special issue of *The American Biology Teacher*. This has been made possible by a generous grant from the Difco

Laboratories. The special issue will be sent to the 5500 members of the National Association of Biology Teachers and reprints of the issue will be available to SAB members who may secure a free copy by writing to the Executive Secretary at the Headquarters Office. This material should be especially useful to those who train or advise high school teachers or students on science fair projects, career days, etc. It is anticipated that advance copies of this special SAB issue of *The American Biology Teacher* may be available in time to be displayed at the exhibit of the Committee on Education in Booth 4 in the Wm. Penn Room at the Adelphia Hotel at the Philadelphia Convention.

#### SCIENCE FAIR AWARDS

A new award series, to be known as the Society of American Bacteriologists Awards, will be offered for the first time at the National Science Fair—International to be held May 11-14, 1960 in Indianapolis. First and second place awards will be presented to the high school students who, in the opinion of the judges, have the best exhibits dealing with microbiology. In addition to an engraved plaque, the Society's commendation certificate, and appropriate ribbons, the winners will receive checks for \$125 for first place and \$75 for second place. The school in which the exhibit was prepared will also receive an engraved plaque. If the competition merits, three honorable mention ribbons will also be awarded. The exhibits will be judged by a committee of Indiana bacteriologists chosen from the Society's Committee on Education and a similar committee of the Indiana Branch.

For students who win awards at state, regional and other fairs or competitions, the Committee on Education, through the office of the Executive Secretary, will award the Society's Commendation Certificate to the student and the sponsoring teacher. It is the responsibility of the Councilor of Local Branch Education Committee to send (in duplicate) full information (name, school, award, exhibit title, date, name of fair, etc.) concerning these awards to the Executive Secretary or the Chairman of the Committee on Education (L. S. McClung, Department of Bacteriology, Indiana University, Bloomington, Indiana) in order that the commendation certificates may be prepared. Following the excellent example of the New Jersey Branch (The Theobald Smith Society) and the Michigan Branch it is planned that the certificates will be presented to the recipients by representatives of the Local Branch in the area. This could be done by inviting the recipients to the next meeting of the Branch or by some ceremony (assembly, science club meeting, etc.) at the recipient's school.

## N.S.F. SUMMER INSTITUTES (1960)

For the first year, two of the summer institutes sponsored by the National Science Foundation for high school teachers, will be devoted exclusively to bacteriology. These institutes will provide intensive training for approximately 75 teachers who will receive stipends, dependency allowances, and travel funds from grants by the N.S.F. to the host universities. These institutes are to be held at University of Colorado, June 20-August 5 (C. R. Bitter, Director) and Indiana University, June 27-July 22 (L. S. McClung, Director).

Several more general institutes have announced programs which include consideration of bacteriology or microbiology as one of the features of the program. These include Northwestern State College, Natchitoches, La., W. G. Erwin, June 7-August 6; Purdue University, June 11-August 5, J. D. Novak; Southern Illinois University, June 19-August 12, I. L. Shechmeister; Florida State University, June 11-August 5, Dwight B. Goodner; University of Pennsylvania, June 27-August 5, J. F. Hazel; and Southwestern Louisiana Institute, June 6-August 5, James R. Oliver.

In addition to the above, several institutes devoted to recent advances in biology will feature bacteriology speakers or other special programs relating to this area.

## 1961 SUMMER INSTITUTES IN BACTERIOLOGY

A far greater number of high school teachers made application for the 1960 NSF supported Summer Institutes in Bacteriology (at Indiana University and University of Colorado) than could be given stipends to permit them to attend these programs. In addition, a number of inquiries were received from biology teachers in small colleges but the 1960 Institute funds were tagged for use for high school teachers only. With the thought that bacteriologists at other universities may wish to develop applications (probably due about August 1st) for Institutes for the summer of 1961, a meeting of interested persons may be arranged during the Philadelphia SAB meeting. Those who are interested in attending such a meeting should write, as early as possible, to L. S. McClung, Department of Bacteriology, Indiana University, Bloomington, Indiana.

## SUMMER COURSES, 1960

Courses listed with the Society's office in response to the notice in *Bacteriological News* (November, 1959) are announced herewith. The information is arranged in the following order: name and address of college or university, name of department, title and number of course, credit in semester hours, duration of the course during the summer of 1960, name of instructor or person in

charge, and prerequisites or special restrictions, if any.

**University of Colorado**—NSF Summer Institute, Boulder. Biology Dept.—*General Bacteriology*; Bact. 201, 3 cr.; June 20-Aug. 5; C. R. Bitter; limited to high school science teachers. *Independent Study in Bacteriology*; Bact. 491, 4 cr.; June 20-Aug. 5; C. R. Bitter; graduate credit; limited to Institute participants, high school science teachers. *Seminar in Bacteriology*; Bact. 501, 2 cr.; June 20-Aug. 5; C. R. Bitter; graduate credit; limited to Institute participants, high school science teachers.

**Indiana University**, Bloomington. Dept. of Bacteriology—*Microbiology in Relation to Man*; Bact. B200 (lec.) 3 cr., Bact. B205 (lab.) 2 cr.; June 15-Aug. 12; L. S. McClung; for undergraduate non-science majors. *Principles of Bacteriology*; Bact. T500 (lec.) 3 cr., Bact. T505 (lab.) 2 cr.; June 15-Aug. 12; L. S. McClung; for graduate students who are high school teachers. *Bacteriology Institute for Biology Teachers*; Bact. T507, 4 cr.; L. S. McClung; high school biology teachers; limited to 32.

**Loyola University**, Chicago, Ill. Dept. of Biological Sciences—*Elementary Bacteriology*; Bio. 211, 4 cr.; June 27-Aug. 5 (day section), June 15-Aug. 15 (evening section); Frank Halleck. *Pathogenic Microbiology*; Bio. 315, 4 cr.; Aug. 8-Sept. 9; Frank Halleck.

**University of Massachusetts**, Amherst. Dept. of Bacteriology and Public Health—*Bacteriology*; Bact. 31, 3 cr. lec., 4 cr. lab.; June 20-July 29; R. B. Czarnecki; no graduate credit.

**Montana State College**, Bozeman. Dept. of Botany and Bacteriology—*Microbiology in Relation to Man*; Bact. 101, 4 qtr. cr.; June 14-Aug. 19; L. D.S. Smith. *Graduate Projects in Bacteriology*; Bact. 519, 1 to 5 qtr. cr.; June 14-Aug. 19; L. D.S. Smith; for graduate students only.

**Syracuse University**, Syracuse, N. Y. Dept. of Bacteriology—*General Bacteriology*; Bact. 101a, 3 cr., July 5-22; Bact. 101b, 3 cr., July 25-Aug. 12; Landon Bowers; regular full year course but 101a only may be taken.

**University of California**, Berkeley. Dept. of Bacteriology—*Survey of Bacteriology*; Bact. S2 (lec.) and *Laboratory Course in General Bacteriology*; Bact. S4 (lab.) 4 cr. (taken concurrently); June 20-July 29; Sanford Elberg; one term of general chemistry. *The Pathogenic Bacteria*; Bact. S101, 6 cr.; Aug. 1-Sept. 9; Sanford Elberg; introductory bacteriology and zoology, organic chemistry.

**University of California**, Los Angeles. Dept. of Bacteriology—*Proseminar in Bacteriology*; Bact. 195, 2 cr.; June 17-July 29; W. R. Romig; consent of instructor. *Introductory Bacteriology*; Bact. 1, 4 cr.; June 17-July 29; Gregory J. Jann; beginning

college chem. *General Bacteriology*; Bact. 6, 2 cr.; June 27–July 29; W. R. Romig; for non-majors. *Advanced Bacteriology*; Bact. 103, 5 cr.; June 17–July 29; W. R. Romig; lab. course in bacteriology. *Special Studies in Bacteriology*; Bact. 199, 1 to 5 cr.; June 17–July 29; W. R. Romig; senior standing and consent of instructor.

#### A GOOD SLOGAN

"If you are ever at a loss for words—mention the activities of the S.A.B.—it helps!"

N. J. Branch News Letter

#### BIOLOGICAL ABSTRACTS NEEDS YOUR COOPERATION

In 1926, when the Society of American Bacteriologists discontinued publishing *Bacteriological Abstracts*, *Biological Abstracts* took over the abstracting and indexing of the bacteriological literature, and since then has provided a continuous coverage through a major depression, a world war, and many financial crises. In 1939 sectional editions of *Biological Abstracts* were established in order to give individual biologists the service they need at low subscription rates. *Section C—Microbiology, Immunology, Public Health, and Parasitology*—was designed specifically for bacteriologists in cooperation with a committee appointed by the Society. For some years this sectional edition was supported reasonably well by the membership—but more recently the circulation has dropped off substantially.

Because of the phenomenal growth in the number of significant research papers published originally in thousands of journals throughout the world, an adequate abstracting and indexing service is essential—for there is no other way to keep posted on the advances in your field. During the past four years *Biological Abstracts* has expanded its coverage by more than 100 per cent and now is being published semi-monthly. Naturally, all production costs increased proportionately and it was necessary, therefore, also to increase subscription prices. However, the cost per abstract to subscribers is lower than ever before. *Section C* is priced at \$30.00 for the 24 semi-monthly issues—but individuals are allowed a discount of 50% making the net cost to SAB members only \$15.00 (the comprehensive subject index may be purchased separately at a special price to sectional subscribers). It is in the best interests of the Society to cooperate with *Biological Abstracts*, and members are urged to enter personal subscriptions.

Then too, there is another area in which bacteriologists can cooperate with *Biological Abstracts*. Practically all the abstracting is done on a voluntary basis. Each member of this select group receives a subscription to the sectional edition of

his choice—and he has the satisfaction of knowing that he is making a very real contribution to the biological sciences community. These volunteer abstracters have the opportunity to read and analyze many articles in the original that otherwise they might not have seen—thus broadening their knowledge. Many leading biologists are, or have been, *B A* abstracters and no doubt will agree that their association with this internationally recognized service has been helpful to them in their careers.

As *Biological Abstracts*' expansion program develops, volunteer abstracter assistance and participation is required in direct proportion—and it becomes increasingly difficult to enlist the services of volunteers. If you are interested in joining this dedicated group, just send a post card to Biological Abstracts, Literature Acquisition Department, 3815 Walnut Street, Philadelphia 4, Pennsylvania. You will receive a prompt reply.

#### KIMBLE METHODOLOGY RESEARCH AWARD FOR 1960

Nominations for the Ninth Kimble Methodology Research Award are being accepted until June 1, 1960. This award, which gives recognition to the application of scientific knowledge to the Public Health Laboratory, was established by the Kimble Glass Company of Toledo, Ohio (subsidiary of the Owens-Illinois Glass Company) and is sponsored by the Conference of State and Provincial Public Health Laboratory Directors.

The cash award of \$1000 and silver plaque will be presented at the annual meeting of the Conference to be held in San Francisco, California, in October, 1960.

#### Rules Governing Nominations

1. The candidate's work to be considered for nomination should be either:
  - a. A fundamental contribution which serves as a baseline for development of diagnostic methods which fall within the province of the public health laboratory.
  - b. The adaptation of a fundamental contribution to make it of use in a diagnostic laboratory.
2. The geographical area from which candidates for nomination are to be drawn should be the United States, its territories, and Canada.
3. Consideration will be given to nominations only if they are covered either by six reprints with six summaries and bibliography or if reprints are not available then six summaries with bibliography will be accepted. A statement which justifies the recommendations of the study must accompany either the six reprints with summaries or the six summaries. (The six copies are needed to facilitate the



work of the committee making its selection in a limited amount of time.)

4. Nominations may be made by the authors, their associates, or by others. Documentary evidence, etc., should not be signed by the nominator. The nomination, however, should be accompanied by a letter of transmittal.
5. Nominations received after June 1, 1960, will not be considered for the Kimble Methodology Research Award for the year of 1960 but will be considered for nomination in 1961.
6. Nominations of a piece of work where there is more than one author is permissible. (Note: if such work is selected by the Awards Committee, division of the cash award shall be arranged between the workers themselves, but the plaque accompanying the cash award shall be suitably inscribed and become the property of the laboratory where the work is done.)
7. The publications, summaries, materials, etc., submitted to the Nominating Committee will not be returned to the sender.
8. Send all nominations to:

P. R. EDWARDS, *Chairman*  
Nominating Committee, Kimble Award  
Communicable Disease Center  
PO Box 185  
Chamblee, Georgia

#### INTERNATIONAL GROWTH SYMPOSIUM AT PURDUE

The Department of Biological Sciences, Purdue University, announces sponsorship of an International Symposium on "Growth: Molecule, Cell, and Organism," to be held at Lafayette, Indiana, on June 16, 17 and 18, 1960. Presentations are scheduled by 33 outstanding investigators from the United States and abroad.

A unified program will be held the first two days and will be concerned with fundamental, chemical and physiological aspects of growth. On the third day there will run concurrently three sectional programs concerned with animal growth, microbial growth, and with plant growth and plant-soil interaction.

Occasion for the symposium is the dedication of Purdue's new Life Science Building.

Additional information can be obtained from Dr. M. X. Zarrow, Life Science Building, Purdue University, Lafayette, Indiana.

#### INTERNATIONAL FERMENTATION SYMPOSIUM

An International Symposium on Fermentation will be held at Rome, May 9 through May 14, 1960. The Symposium is sponsored by the Istituto Superiore di Sanita (Italian Institute of Public Health), the Italian Chemical Society, and the

Fermentation Subdivision of the American Chemical Society. It will consist of original papers and panel discussions in three general fields, fermentation technology, fermentation chemistry, and fermentation biology. Excursions to points of scientific and general interest will complete the program.

Inquiries should be addressed to: International Fermentation Symposium, Istituto Superiore di Sanita, Viale Regina Elena, 299, Rome, Italy.

#### WANTED: UNUSED ABSTRACT SETS

The Society needs about 50 sets of the abstract forms sent to members with the November *News*. These are the forms used to submit abstracts for papers to be given at the 1960 Annual Meeting. Members having unused sets are requested to please mail them to the Society's headquarters in Detroit.

#### N.S.F. OFFERS LABORATORY CON- STRUCTION FUNDS

The National Science Foundation announces that the next closing date for receipt of proposals for support of renovation and/or construction of graduate level (doctoral) research laboratories is September 1, 1960. Proposals received prior to that date will be reviewed during late fall and early winter. Disposition of approved proposals will be made shortly thereafter.

This program will continue to require at least 50 per cent participation by the institution with funds derived from non-Federal sources. Proposals may be submitted for modernization or construction of research laboratories, including laboratory furnishings but not including apparatus or equipment, in any field of the natural sciences. For the present, this program is restricted to those departments which have an on-going program leading to the Ph.D. degree. Support of facilities to be used primarily for instructional purposes will not be considered. Preliminary inquiry should be made to the Division of Biological and Medical Sciences, National Science Foundation, Washington 25, D. C. Information concerning the Program and instructions for preparation of proposals may be obtained upon request.

#### NEW CURATOR AT AMERICAN TYPE CULTURE COLLECTION

Following the retirement of Dr. Freeman Weiss, Dr. William A. Clark, who has been acting as assistant curator, has assumed the curatorship of the ATCC. Society members who read the report of the growth of the ATCC which appeared in January *News* may be interested in the accompanying table which illustrates the growth of the collection to over 5300 microorganisms.



No. of Cultures listed in ATCC Catalogues  
(1927 to 1958)

	Catalogue Year				
	1927	1938	1949	1958	1959 Added
Actinomycetes.....	70	90	77	110	67
Bacteria (other).....	879	1190	1479	2060	397
Total bacteria.....	949	1280	1574	2170	464
Molds, misc. fungi.....	381	558	896	1889	342
Yeasts.....	150	297	495	395	23
Total fungi.....	531	855	1391	2284	365
Total strains.....	1480	2135	2975	4454	849
Algae.....	0	0	2	24	16
Protozoa.....	0	0	2	9	4

### FREE: NEW LABORATORY COMPUTER

For some years we have made use of a computing device which greatly simplifies certain calculations with microbiological data. The computer (which is essentially a circular slide rule with repeating C and D scales) has many capabilities, but it serves three primary functions: (1) multiplication and division involving two or more large numbers where two place accuracy is sufficient. The repeating scales make it unnecessary to keep track of the decimal point, and also make possible (2) conversion of any number from 1 to  $10^{10}$  to its base 2, base  $e$ , or base 10 logarithm, by incorporation of suitable log scales. Finally, (3) direct interconversion of base 2, base  $e$ , and base 10 logarithms may be made.

We have found the computer particularly useful in handling calculations based on direct microscopic counts where the introduction of conversion and dilution factors usually means that three rather large numbers are involved. This device will quickly make the calculations, keeping account of the decimal place, and yield the answer either directly or as a logarithm to the appropriate base. With the thought that these computers would also be useful to others, we have had them produced in some quantity (with the support of the Public Health Service) for distribution. We shall be glad to send computers and operating instructions, gratis, to interested persons on request.

R. E. ECKER  
W. R. LOCKHART  
Iowa State University  
Ames, Iowa

### MORE FEDERAL SUPPORT URGED FOR BASIC RESEARCH

In a report on "the National Science Foundation and the Life Sciences" the Senate Committee on Government Operations has been urged to support increased Federal spending for fundamental research. More knowledge about the

basic processes of life is necessary for the conquest of diseases says the report prepared by the Subcommittee on Reorganization and International Organization.

In a Foreword to the 96 page publication, the Subcommittee states that "pure research is still a stepchild," receiving only a small fraction of sums which are allotted to "categorical" research aimed specifically at cause and cure of certain diseases. In response to the "perennial, gadget-minded question" which is asked about pure research—"What's it good for?" the report cites a large number of instances in which so-called pure research has led to tremendously useful findings in the conquest of disease.

The report describes and commends the National Science Foundation's work at home and abroad in eight fields: developmental biology, environmental biology, genetic biology, molecular biology, psychobiology, regulatory biology, systematic biology and metabolic biology. Praise is directed toward the attitude of the Federal Government's main health research arm, the National Institutes of Health. It seeks not only so-called "immediate and practical results," but "genuine creativity" by individual scientists whether the findings are immediately practical or not. "Science must be free to alter course and to exploit new-found routes, rather than being forced to attack specific targets without adequate knowledge of how cells work, for example. Until we give science its head, meaning freedom to search where it will, we may be unwittingly weakening science's thrust toward ultimate victory over disease." The report cites numerous illustrations in which pure research in physical and social sciences is helping biological science toward the conquest of disease.

The Subcommittee concludes that both pure and applied research are needed rather than an "either-or" arrangement. It commends the increase of Federal appropriations aimed at the conquest of such specific diseases as cancer, heart disease and other major killers and cripples, and suggests that the United States not yield by an iota its laudable determination to provide resources to conquer such specific scourges. Scientists have reported, however, that a more balanced relationship between pure and applied research would be more effective toward conquering disease.

The report is the seventh in a series issued as part of a comprehensive review of international medical research and medical assistance programs. Copies are available for 30 cents from the Superintendent of Documents, U. S. Government Printing Office, Washington, 25 D. C.

### NOTICES

**Journals for sale:** N. F. Insalata, 25 Kathwood Rd., White Plains, N. Y., would like to dispose of complete sets of *Journal of Bacteriology* and

*Bacteriological Reviews*, volumes 59 through 78. Also *Bacteriological Proceedings* 1950 through 1959.

**ONR offers support:** The Microbiology Branch of the Office of Naval Research, announces that proposals for possible support of research during the fiscal year 1961 will be accepted until October 1, 1960. Inquiries should be addressed to: Microbiology Branch (Code 443), Department of the Navy, Office of Naval Research, Washington 25, D. C.

**New Institute in Brazil:** Both our North American and South American members will be pleased to learn of the creation of the Institute of Microbiology at the University of Rio Grande do Sul, Porto Alegre, Brazil. The objectives of the Institute are to increase the development of teaching and research in microbiology in the University and the articulation of the Institute with other national and foreign institutes for the purpose of scientific interchange.

**Radiation Biology expanded at Syracuse:** The Syracuse University training program in Radiation Biology has been expanded through an Atomic Energy Commission teaching grant of \$10,200 used for the purchase of radiation detectors and accessory teaching equipment. Prof. Donald G. Lundgren, bacteriology and botany, and Prof. Bernard S. Strauss, zoology, are directing the training program which focuses student attention on (1) radio isotopes, their detection and application to biology and (2) the study of effects of radiation on biological systems.

**Journal wanted:** Joseph C. Olson, Jr., Professor of Dairy Bacteriology, University of Minnesota, needs *Journal of Bacteriology*, Vol. 25, No. 6 to complete his journal set. Send communications directly to Professor Olson.

**Cornell offers electron microscope course.** A special Summer Laboratory Course in Techniques and Applications of the Electron Microscope will be offered to qualified senior biologists and medical research workers under the direction of Professor Benjamin M. Siegel at Cornell University's Electron Microscopy Laboratory. The session will run from June 13 through July 1. The course will include extensive laboratory work, lectures covering the basic principles and methods, and lectures on specific biological applications to be given by prominent guest lecturers. It is being sponsored by a grant from the National Science Foundation.

Requests for information and applications should be addressed to Professor Benjamin M. Siegel, Rockefeller Hall, Cornell University, Ithaca, N. Y.

#### NEWS ABOUT OUR MEMBERS

**John H. Dingle**, Western Reserve University, and **Albert Coons**, Harvard University, were 1959 recipients of the Albert Lasker Awards.

The awards, granted for outstanding basic medical research, each consists of twenty-five hundred dollars and a gold *Winged Victory* statuette.

**Robert F. Pittillo**, formerly with Parke, Davis & Co., Detroit, has been appointed Head, Microbiology Section, Southern Research Institute, Birmingham, Alabama.

**Sara E. Branham**, former Chief of Section on Bacterial Toxins, Division of Biologic Standards, N. I. H., has been named Medical Woman-of-the-Year for 1959 by Branch One of The American Medical Womens Association.

**Peter L. Sgueros**, formerly research microbiologist for the R. J. Reynolds Tobacco Company has joined the staff of the Marine Laboratory, University of Miami, Miami, Florida.

The School of Aviation Medicine, USAF, has moved from Randolph Air Force Base to Brooks Air Force Base, Texas. **Roland B. Mitchell** is Chief of the Department of Medical Sciences. **E. Staten Wynne** has resigned from the University of Texas Dental Branch to become Senior Bacteriologist and Deputy Chief of the Microbiology-Cellular Biology Branch. Other S.A.B. members in the Branch are **Irving Davis**, **Dow O. Woodward**, **James E. Moyer**, **Ann C. Garner**, and **Walter M. Sellers**.

Throughout each year for the past 16 years, **Morris Scherago**, Head of the Department of Bacteriology, University of Kentucky, collects a variety of news items—election clippings, enrollment stories, personal notes on faculty members—and then in November edits these notes for a Christmas newsletter for alumni of the department. This year's 32 page edition went to over 600 alumni.

**Karl F. Meyer**, has been awarded the Honorary Doctor of Science degree from the University of Pennsylvania.

**Herbert S. Goldberg**, Department of Microbiology, University of Missouri, is on sabbatical leave and is doing research at the Low Temperature Research Station, University of Cambridge, England.

**Doyle Roebuck** has transferred from the Medical College of Virginia to the Animal Disease Department, Mississippi State University.

**James W. Moulder** will become Chairman of the Department of Microbiology at the University of Chicago on July 1.

*Modern Medicine* has named **Albert H. Coons** and **Albert B. Sabin** among recipients for 1960 of the Distinguished Achievement Awards for world medical progress.

**C. D. Dukes** has returned to the University of Houston after a year at the Rockefeller Institute.

From the University of Texas **Edward Leadbetter** has joined the faculty of Amhurst College, **Delbert Shankel** has become a faculty member of the Bacteriology Department at the University

of Kansas, and **Verna Ray** is associated with Chas. Pfizer and Co., Groton, Conn.

**Lester Packer**, formerly of the University of Pennsylvania has joined the faculty of Southwestern Medical School, Dallas.

**Paul Khan** has been appointed Manager, Central Research Labs., DCA Food Industries, and **Bernard Brachfeld** has been named Director of the company's Downyflake Foods Division.

**John H. Litchfield** has moved to Battelle Memorial Institute, Columbus, Ohio, from Dept. of Food Engineering, Illinois Institute of Technology.

**Holger Jannasch** has returned to Göttingen, Germany from the University of Wisconsin.

**Margaret J. Carlson**, formerly at the Walter Reed Army Medical Center, has been appointed executive secretary of the new microbiology training committee in the division of general medical sciences of the N.I.H.

**Charles R. Stumbo**, formerly with H. J. Heinz Co., has opened a consulting practice for the food processing industry at Route 2, Overbrook, Kansas.

**Marvin L. Speck**, Professor of Dairy Bacteriology at North Carolina State College, was selected by the American Dairy Science Association to receive the 1959 Borden Award in dairy manufacturing at the Association's annual meeting, June 1959. The award, consisting of a gold medal and \$1,000, was given for research conducted in various areas of dairy bacteriology.

After 6 years on the Board of Trustees of *Biological Abstracts*, **W. B. Sarles**, University of Wisconsin, was replaced on Jan. 1, 1960 by **J. R. Porter**, State University of Iowa. Another Society member on the Board of Trustees is **A. F. Langlykke**, Squibb Institute for Medical Research.

**Gabriel Castellano**, formerly with Parke, Davis and Co., is now associated with Microbiological Associates.

**Fred S. Orcutt** has been appointed Head of the Biology Department, Virginia Polytechnic Institute.

**G. K. Gollakota**, formerly at the University of Illinois, has been named Director of the School of Basic Science and Humanities, U. P. Agricultural University, Phoolbagh, District Nainital, India.

Pitman-Moore Co. has transferred **Howard J. Koonse** from Indianapolis, Indiana to their laboratories in Buenos Aires, Argentina.

**Nick Karabatsos** has joined the Section of Preventive Medicine, Yale University School of Medicine.

**Gerald Litwack** has been named Director of Research, Division of Cardiology, Philadelphia General Hospital and associate professor of

biochemistry at the Graduate School of Medicine, University of Pennsylvania.

Recent recipients of American Cancer Society Grants: **Selman Waksman**, **Bernard Koft** and **Vincent Groupe**.

**Michael Heidelberger** has been named Centenary Lecturer for 1960 by the Chemical Society, London. Between May 17 and June 2, he will lecture before the Chemical Society's local sections in Dublin, Manchester, Hull, Newcastle, Oxford, Cambridge and London.

## AMERICAN ACADEMY OF MICROBIOLOGY

The American Board of Microbiology is now working actively on the mechanics of the certification program. Training and experience programs need to be developed, and application and record forms must be prepared before additional steps will be made. This is taking some time but progress is being made. The Chairmen of the Standards and Examination Committees for the areas in which there is planned certification have been appointed, and will have reports at the next meeting of the Board. This meeting of the American Board of Microbiology will be Thursday afternoon May 5, 1960 and Friday, May 6, 1960, in Philadelphia.

The program for the Conference on Education and Professional Standards in Microbiology sponsored by the Council on Education and Laboratories of the Academy is nearing completion. Most of the speakers who have been invited to participate have accepted. The general plan of the program and the topics to be discussed follow:

### PROGRAM

#### Morning Session—

1. "Factors that Determine Professional Standards in the Engineering Profession"
2. "Establishment and Maintenance of Professional Standards in the Medical Profession"
3. "Professional Standards in the Chemical Profession"
4. "Role of Accreditation of Institutions in the Establishment and Maintenance of Educational and Professional Standards"

#### Afternoon Session—

1. "Relations of Professional Responsibilities to Levels of Education"
2. "Specialization and the Pursuit of Excellence"
3. "Objectives of Undergraduate, Graduate and Postgraduate Educational Programs in Microbiology"

#### Evening Session—

Round table discussion by Fellows of the American Academy of Microbiology dealing with specific problems in Microbiology.

## LOCAL BRANCH ACTIVITIES

### NEWS FROM THE BRANCHES

#### What's New in Your Branch?

When the officers of the Branches get together at the Society's annual meeting, there is always a lot of talk and questions about what the Branches are doing. Yet only three Branches have sent in items for this issue of the *News*. Read over the following items and see if you Branch isn't doing something just as interesting—then send it in to the *News*. You will be surprised how little it takes to get your Branch "in the news!"—Editor.

#### Illinois

The Illinois Branch held its Fall Meeting at the University of Illinois, Urbana, to coincide with the dedication of Burrill Hall, named in honor of Dr. T. J. Burill, President of the S.A.B. in 1916 and an Honorary Member of the Society. A feature of the meeting was the unveiling of a portrait of the late Professor Fred Tanner, first President of the Illinois Branch and first Head of the Bacteriology Dept. at the University of Illinois.

The branch will celebrate its 25th anniversary this spring with a 2 day meeting to which an invitation is being extended to all branches that border Illinois.

#### New Jersey

Three Soviet scientists, Dr. Barbara Severin of the All-Union Scientific Research Institute of Antibiotics in Moscow, Dr. Pavel Koshkin of the Institute of Antibiotics in Leningrad, and Dr. Alexander Savitsky of Omsk, were guests of the December meeting of the New Jersey Branch.

The branch continues its high interest in careers and education. At each monthly meeting of the branch, a high school science teacher is an invited guest. Arnold Demain represented the Branch at the State convention of the N. J. Science Teachers Association.

The N. J. Branch continues its vigorous support of the Society with the goal of 100 per cent of branch members belonging to the Society.

#### Texas

The Texas Branch is pursuing vigorously its activities in career promotion. A standing Committee for the Advancement of Microbiology has been established with R. B. Mitchell (chairman) and E. O. Bennett, S. T. Lyles, I. J. Hahn, Sister Joseph Marie and Mrs. Behringer.

### REPORTS FROM LOCAL BRANCH MEETINGS

#### Northern California-Hawaii Branch (Carl Lamanna, Secretary-Treasurer)

**December 11, 1959.** Stanford, Cal.

Open House at Stanford University.

Papers were presented on phases of microbiological work in various departments. Following the formal meeting, there were guided tours through the new Stanford Medical Center.

#### Speakers:

Department of Medical Microbiology:

Sidney Raffel

C. E. Clifton

Carlton E. Schwerdt

Robert J. Roantree

Leon T. Rosenberg

Department of Biochemistry:

Arthur Kornberg

Department of Genetics:

Joshua Lederberg

School of Biology:

Charles Yanofsky

#### Southern California Branch (John E. Forney, Secretary-Treasurer)

**October 23, 1959.** Childrens' Hospital, Los Angeles, California.

Some aspects of medical ecology, J. R. Audy, Director, The George Williams Hooper Foundation, San Francisco, California. This was the Raymond V. Stone Memorial Lecture in memoriam to Dr. Stone who was a charter member of this branch.

**December 17, 1959.** Pabst-Eastside Brewery, Los Angeles, California.

1. Flavobacterium as a contaminant and pathogen. Frances A. Hallman, Rosalyn A. Deigh, and W. L. Hewitt, University of California, Los Angeles, Medical Center.

2. "Dilution death" and growth in defined medium of *Bacillus subtilis*. J. J. Pene, W. J. Brabander and W. R. Romig, Dept. Bacteriology, University of California, Los Angeles.

3. A quantitative bacteriolytic determination of lysozyme activity in blood and lymph. O. E. Lobstein, Research Foundation for Disease of the Eye, Beverly Hills.

4. *Bacillus thuringiensis*—past, present and future. P. E. Yoder and E. L. Nelson, Dept. Bacteriology, University of California, Los Angeles.

5. A tourist's impressions of Soviet Russia.

# 1960 OFFICERS OF LOCAL BRANCHES

Branch	President	Vice President	Secretary-Treasurer	Treasurer	Councilor
Allegheny	J. J. Reid Dept. Bact. Pennsylvania St. U. University Park, Pa.	Paul Kost U.S.V.A. Hosp. Pittsburgh, Pa.	E. S. Lindstrom Pennsylvania St. U. University Park, Pa.		W. K. Harrell Dept. Microb. W. Va. Med. Center Morgantown, West Va.
Northern California and Hawaii	M. P. Starr Dept. Bact. U. of California Davis, Cal.	Alcor S. Browne Cal. St. Health Dept. Labs. Oxford St. Berkeley 4, Cal.	Carl Lamanna Naval Biological Lab. U. California Berkeley 4, Cal.		R. E. Hungate Dept. Bact. U. of California Davis, Cal.
Southern California	Frances A. Hallman Clinical Lab. Med. Center, UCLA Los Angeles 24, Cal.	John E. Fomey Los Angeles City Health Dept. 111 E. First St. Los Angeles 12, Cal.	William R. Romig Bact. Dept. U. of California Los Angeles 24, Cal.		A. F. Rasmussen Dept. of Inf. Dis. U. of Cal. Med. School Los Angeles 24, Cal.
Colorado-New Mexico-Wyoming	James Tong V.A. Hospital 1055 Clermont Denver 20, Colo.	W. E. Clapper 4800 Gibson Blvd. S.E. Loveland Clinic Albuquerque, New Mexico	Robert De Boer Bact. Laboratory St. Luke's Hospital Denver, Colo.	Mary Rothlauf 448 University Blvd. Denver, Colo.	S. Morrison Dept. of Path. & Bact. Colorado St. U. Fort Collins, Colo.
Connecticut Valley	Henry P. Treffers Dept. of Microb. Yale U. School of Med. New Haven 11, Conn.	Joel R. Cohen Springfield Hospital 759 Chestnut St. Springfield, Mass.	S. H. George Allen Dept. of Bact. U. of Connecticut Storrs, Conn.		Robert C. Cleverdon Dept. of Bact. U. of Connecticut Storrs, Conn.
South Florida	M. Michael Sigel Dept. of Microb. U. of Miami Coral Gables 34, Fla.	Virginia N. Darroch 1925 Alameda Dr. North Miami, Fla.	Murray M. Streitfeld Dept. of Microb. U. of Miami Coral Gables 34, Fla.	Frank J. Roth, Jr. Dept. of Microb. U. of Miami Coral Gables 34, Fla.	Warren Hoffert State Board of Health 1350 N.W. 14th St. Miami, Fla.
Illinois	Z. John Ordal U. of Illinois Urbana, Ill.	C. C. Lindgren Southern Illinois U. Carbondale, Ill.	Charles J. Rickher 437 N. Buttrick St. Waukegan, Ill.	Norbert M. Soukals 2917 N. Linder Ave. Chicago, Ill.	H. B. Harding Northwestern U. Med. School Chicago, Ill.
Indiana	Dorothy M. Powelson Dept. of Biology Purdue U. W. Lafayette, Ind.	Walter A. Konetzka Dept. of Bact. Indiana U. Bloomington, Ind.	Harold Garner Dept. of Biology Purdue U. W. Lafayette, Ind.		D. N. Walcher Indiana U. Med. Center Indianapolis, Ind.
Intermountain	Paul B. Carter Dept. of Bact. Utah State U. Logan, Utah	Douglas W. Hill Dept. of Bact. U. of Utah Salt Lake City Utah	Richard D. Sagers Dept. of Bact. Brigham Young U. Provo, Utah		Paul S. Nicholes Dept. of Bact. U. of Utah Salt Lake City, Utah
Kentucky-Tennessee	Ilda McVeigh Vanderbilt U. Box 1549 Substa. B. Nashville 6, Tenn.	Ralph Wiseman Dept. of Bact. U. of Kentucky Lexington, Kentucky	Raymond W. Beck Dept. of Bact. U. of Tennessee Knoxville, Tenn.		Emil Kotcher Dept. of Microb. U. of Louisville Louisville, Ky.

Maryland

Paul Rohde

Joseph M. Joseph

Fred Ray

Donald E. Shay



U. of Louisville, Louisville, Ky.  
U. of Tennessee, Knoxville, Tenn.  
U. of Kentucky, Lexington, Kentucky  
Box 150, Shiloh, B. Nashville 6, Tenn.

Maryland	Paul Rohde 1640 Gorschuch Ave. Baltimore 18, Md.	Joseph M. Joseph 2241 Lake Ave. Baltimore 13, Md.	Fred Ray Tech. Eval. Div. Fort Detrick Frederick, Md.	Donald E. Shay U. of Maryland School of Dentistry Baltimore 1, Md.
Michigan	Pearl Kendrick School of Public Health U. of Michigan Ann Arbor, Mich.	Ralph N. Costilow Dept. Microb. Michigan State U. East Lansing, Mich.	Marvis Richardson Dept. Microb. Michigan State U. East Lansing, Mich.	Chester W. Christensen Difco Laboratories, Inc. 920 Henry Detroit 1, Mich.
Eastern Missouri	Leonard F. Laskowski, Jr. St. Louis U. 1402 S. Grand Blvd. St. Louis, Mo.	Alex C. Sonnenwirth Jewish Hosp. of St. Louis 216 S. Kingshighway Blvd. St. Louis 10, Mo.	James F. Barrett Dept. of Microb. U. of Missouri Columbia, Mo.	Harrison A. Hoffmann Anheuser-Busch, Inc. 721 Pestalozzi St. St. Louis, Mo.
Missouri Valley	A. F. Borg Kansas State U. Manhattan, Kan.	T. L. Thompson U. of Nebraska Lincoln, Nebr.	L. W. Hedgecock V.A. Hospital 4801 Linwood Blvd. Kansas City, Mo.	David Paretsky Dept. of Microb. U. of Kansas Lawrence, Kan.
New Jersey	Frederick C. Kull Ciba Pharmaceutical Products, Inc. Summit, N. J.	Arnold L. Demain Merck and Co., Inc. Rahway, N. J.	Allen I. Laskin Squibb Institute for Med. Research New Brunswick, N. J.	Werner Braun Institute of Microbiology Rutgers-The State U. New Brunswick, N. J.
Central New York	Martin Alexander Dept. of Agronomy Cornell U. Ithaca, N.Y.	H. B. Naylor Dept. of Bact. Cornell U. Ithaca, N.Y.	Landon E. Bowers Dept. of Bact. & Bot. Syracuse U. Syracuse 10, N.Y.	Robert Guthrie Children's Hospital 219 Bryant St. Buffalo, N.Y.
Eastern New York	Charles Hurwitz U.S.V.A. Hospital Albany 8, N.Y.	Emery W. Dennis Sterling-Winthrop Res. Inst. Rensselaer, N.Y.	Ann E. Hohenstein Div. Lab. & Research N.Y. St. Dept. of Health Albany, N.Y.	W. Dexter Bellamy General Electric Res. Lab. PO Box 1080 Schenectady 1, N.Y.
New York City	Jerome R. Luckner Becton, Dickinson & Co. Rutherford, N.J.	Marion Wilson St. Luke's Hospital 113 St. & Amsterdam Ave. New York, N.Y.	A. C. Dornbush American Cyanamid Co. Pearl River, N.Y.	Philip C. Eisman Ciba Pharmaceutical Prod. Co. Summit, N.J.
North Carolina	Robert Tuttle Bowman Gray Sch. Med. Winston-Salem, N.C.	Maurice Shepard Naval Med. Fld. Res. Lab. Camp Lejeune, N.C.	Mary A. Poston Duke U. Med. Center Durham, N.C.	J. O. Thayer U. of N.C. Sch. Pub. Health Chapel Hill, N.C.
North Central	J. C. Ayres Dept. Food Tech. Iowa St. U. Ames, Iowa	D. W. Watson Dept. Bact. & Immunol. U. of Minnesota Minneapolis, Minn.	J. C. Ayres (Acting) Dept. Food Tech. Iowa St. U. Ames, Iowa	C. D. Cox Dept. Microb. St. U. of S. Dakota Vermilion, S.D.
Northeast	Albert Kelner Brandeis U. Waltham, Mass.	Catherine Atwood Boston City Health Lab. Boston, Mass.	Alice T. Marston Boston U. Sch. Med. 80 E. Concord St. Boston 18, Mass.	Howard E. Lind Sias Laboratory Brooks Hospital Brookline 46, Mass.

# 1960 OFFICERS—Continued

Branch	President	Vice President	Secretary-Treasurer	Treasurer	Councilor
Northwest	John J. Munoz Dept. Bact. Montana St. U. Missoula, Mont.	Robert C. Hurd Dept. Biology Gonzaga U. Spokane, Wash.	Jane Nishio Rocky Mtn. Lab. Hamilton, Mont.		Louis, Des. Smith Dept. Bot. & Bact. Montana St. Coll. Bozeman, Mont.
Ohio	Jan Schwarz The Jewish Hospital Cincinnati 29, Ohio	Abram B. Stavitsky Dept. Microb. Western Reserve U. Cleveland 6, Ohio	Bernard A. Steinberg The Wm. S. Merrell Co. Cincinnati 15, Ohio		H. Earle Swim Dept. Microb. Western Reserve U. Cleveland 6, Ohio
Eastern Pennsylvania	Joseph S. Gots Dept. Med. Microb. U. of Pennsylvania Philadelphia 4, Pa.	none	Elizabeth H. Fowler Temple U. Broad & Montgomery Sts. Philadelphia 22, Pa.		Carl F. Clancy Bact. Dept. Pennsylvania Hosp. Philadelphia 7, Pa.
Puerto Rico	Francisco Landron Hoare 554 Santurce, P.R.	Carlos M. Berrocal Dresde 468 Puerto Nuevo, P.R.	Maria A. Medina-Carmeno Box 1082 Rio Piedras, P.R.		none
Rio	C. de Oliveira Silva Pena Chaves 15 ap 202 Gavea Rio de Janeiro, Brazil	Nilson C. da Silva Av. Pasteur 250 Rio de Janeiro, Brazil	Mojzes A. Fuks Av. Pasteur 250 Rio de Janeiro, Brazil		Gobert A. Costa Caixa Postal 926 Rio de Janeiro, Brazil
South Central	W. A. Pierce, Jr. Microb. Dept. Tulane U. School of Med. New Orleans 12, La.	W. L. Flannery Dept. Bact. Southwestern Louisiana U. Lafayette, La.	J. D. Schneidau, Jr. Microb. Dept. Tulane U. School of Med. New Orleans, La.		R. J. Strawinski Dept. Bact. Louisiana St. U. Baton Rouge, La.
Southeastern	M. E. Tyler Dept. Bact. U. of Florida Gainesville, Fla.	R. G. Eagon Dept. Bact. U. of Georgia Athens, Ga.	Mendel Herzberg Dept. Bact. U. of Florida Gainesville, Fla.		Margaret Green Dept. Bact. U. of Alabama University, Ala.
Texas	Joe A. Bass Dept. Bact. U. of Texas Med. Br. Galveston, Texas	J. B. Davis Magnolia Petroleum Co. Field Research Labs. Dallas 12, Texas	E. O. Bennett Dept. Biology U. of Houston Houston, Texas		E. B. M. Cook State Health Dept. Austin 1, Texas
Virginia	Q. N. Myrvik Dept. Microb. U. of Virginia Charlottesville, Va.	Catherine Russell Dept. Microb. U. of Virginia Charlottesville, Va.	Wesley A. Volk Dept. Microb. U. of Virginia Charlottesville, Va.		H. J. Welshimer Dept. Microb. Med. Coll. of Va. Richmond, Va.
Washington, D.C.	Mary Louise Robbins Dept. Bact. Geo. Washington U. Washington, D.C.	Howard Reynolds U.S. Dept. Agriculture Beltsville, Md.	Elizabeth J. Oswald Food & Drug Adm. U.S. Dept. HEW Washington 25, D.C.		Michael J. Pelczar Dept. Bact. U. of Maryland College Park, Md.

Sidney Rittenberg, Dept. Bacteriology, University of Southern California, Los Angeles.

**Colorado-New Mexico-Wyoming Branch** (Robert De Boer, Secretary)

**October 24, 1959.** Colorado State University, Fort Collins, Colorado

Symposium on Animal Diseases.

1. Epizootology of rhinotracheitis. T. L. Chow, Colorado State University, Fort Collins.

2. Hemorrhagic necrosis in the skin of rabbits produced by synergism between epinephrine and fractions of *Pasteurella hemolytica*. Robert Keiss, Dept. Path. and Bact., Colorado State University, Fort Collins.

3. Pulmonary emphysema in cattle. L. R. Maki, University of Wyoming, Laramie.

4. Antigen studies of ovine, bovine, and human isolates of *Vibrio fetus*. G. W. Robertstad, University of Wyoming, Laramie.

**Connecticut Valley Branch** (S. H. G. Allen, Secretary-Treasurer)

**November 6, 1959.** University of Massachusetts, Amhurst.

Symposium: Physiology of bacterial cell organization.

Convenor: Wolf Vishniac, Yale University.

1. Organization of large molecules in cell organization. J. De Moss, Yale University, New Haven, Conn.

2. Organization of respiratory pathways. Arnold F. Brodie, Harvard University Medical School, Boston.

3. Organization of bacterial chromatophores. J. Bergeron, Brookhaven National Laboratory.

Symposium: Application of primary cell cultures in the study of animal viruses.

Convenor: G. H. Hsiung, Yale University.

1. Isolation and grouping of avian and bovine enteric viruses. Roy E. Luginbuhl, University of Connecticut, Storrs.

2. Variations in host responses to infection by certain arthropod viruses. J. R. Henderson, Yale University, New Haven, Conn.

3. Biologic and genetic studies of enteric viruses of man (human enteroviruses). G. D. Hsiung, Yale University, New Haven, Conn.

**Illinois Branch** (C. J. Rickher, Secretary)

**October 30, 1959.** University of Illinois, Champaign, Illinois.

1. A description of an anaerobic vibrio. M. J. Wolin, E. A. Wolin, N. Jacobs and G. Weinberg, Dept. Bacteriology, University of Illinois, Urbana.

2. Lysis of *Streptococcus pyogenes* by enzymes of *Streptomyces albus*. H. D. Slade, Dept. Microbiology, Northwestern University Medical School, Chicago.

3. Studies on s-adenosylmethionine in the vacuole of *Candida utilis*. G. Svihla and F. Schlenk, Argonne National Laboratory, Lemont, Ill.

4. Studies on the biosynthesis of poly- $\beta$ -hydroxybutyrate in *Bacillus megaterium*. R. A. Slepecky and J. Law, Dept. Biological Science, Northwestern University, Evanston, Ill.

5. Enzymatic utilization of glucose by a Basidiomycete. H. P. Meloche, Jr. and T. I. Baker, U.S.D.A. Northern Utilization Research Lab., Peoria, Ill.

6. An isotope effect in the radiation biology of *Bacillus megaterium*. E. L. Powers and B. F. Kaleta, Argonne National Laboratory, Lemont, Ill.

Evening Speaker: Dr. Charles F. Niven, Jr., American Meat Inst. Foundation, Chicago, Illinois. "Enterococci in Foods"

**Intermountain Branch** (Richard D. Sagers, Secretary-Treasurer)

**November 14, 1959.** University of Utah, Salt Lake City, Utah.

1. An *in vitro* system for quantitating rates of phagocytosis and cytopepsis. Fred Miya and Stanley Marcus, Dept. of Bacteriology, University of Utah, Salt Lake City.

2. Acetate formation in *Clostridium acidurici*: Acetokinase. Richard D. Sagers, Dept. Bacteriology, Brigham Young University, Provo, Utah.

3. Metabolism of isoniazid. 1. Comparison of the chemical and bioassay methods for determination of isoniazid. Ralph A. Knight, Dorian R. Faber, Merle J. Selin, and H. Wm. Harris, Veterans Hospital, Salt Lake City.

4. The susceptibility of wild animals to experimental plague infections. Nyven J. Marchette, David L. Lundgren, and Paul S. Nicholes, Etiological Research, Dugway, Utah, and Dept. Bacteriology, University of Utah, Salt Lake City.

5. Medical photography. Howard E. Tribe, Medical Illustration, University of Utah, Salt Lake City.

6. Storage and preservation of properdin. William G. Wu, Fred Miya and Stanley Marcus, Dept. Bacteriology, University of Utah, Salt Lake City.

7. Influence of bacterial lipopolysaccharides on hemolysin formation. Don H. Larsen and LeRoy F. Peel, Dept. Bacteriology, Brigham Young University, Provo, Utah.

8. Hemolytic toxins of *Staphylococcus aureus*. E. Roylance Martin and L. P. Gebhardt, Dept. Bacteriology, University of Utah, Salt Lake City.

9. Studies on the virulence of strains of *Candida albicans*. Douglas W. Hill and L. P. Gebhardt, Dept. Bacteriology, University of Utah, Salt Lake City.

10. Immunogenic characteristics of two spent medium filtrate concentrates from *Pasteurella*

*tularensis* cultures. Paul S. Nicholes and Melvin T. Hatch, Dept. Bacteriology, University of Utah and Dugway Proving Grounds, Dugway, Utah.

11. Immunization against Ehrlich's ascites carcinoma with nitrogen mustard treated cells. James A. North and David M. Donaldson, Dept. Bacteriology, Brigham Young University, Provo.

12. Effect of repeated testing in rabbits on the development of tolerance to *Salmonella typhimurium* pyrogen. Joanna Luke, Carl Anselmo, and Stanley Marcus, Dept. Bacteriology, University of Utah, Salt Lake City.

**Kentucky-Tennessee Branch** (Raymond W. Beck, Secretary-Treasurer)

**November 6-7, 1959.** Children's Hospital, Louisville, Kentucky

1. Enterovirus isolations and associated clinical syndromes in Kentucky. Katherine P. Muir, Helen Layman, Diane Young and Emil Kotcher, Division of Public Health Laboratories, Kentucky State Dept. Health, Louisville.

2. Incidence of type-specific *Hemophilus influenzae* in nasopharyngeal cultures of normal school children. Sarah H. Sell and Frances Womack, Dept. Pediatrics, School of Medicine, Vanderbilt University, Nashville.

3. Physiology and radiation response of a catalase-negative bacterium. Howard Adler, Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tenn.

4. A rapid test for bacterial sensitivity to antibiotics. James R. Brown, Raymond W. Beck, John M. Woodward, D. Frank Holtman and Ray P. Porter, East Tennessee Children's Hospital, Knoxville, Tenn. and Dade Reagents, Incorporated, Miami, Florida.

5. The distribution of serum proteins in tularemic rats. John M. Woodward and Gennaro J. Miraglia, Dept. Bacteriology, University of Tennessee, Knoxville.

6. Differentiation of virulent and avirulent *Escherichia coli*, *Staphylococcus aureus* and *Salmonella pullorum* by reduction of 2,3,5-triphenyl-2H-tetrazolium chloride. James A. Sherrard, Dept. Microbiology, University of Louisville, Louisville.

7. Dialysis bag method for the production of high titer staphylococcal bacteriophage stocks in liquid media. E. H. Pine and E. S. Dooley, U. S. Army Medical Research Laboratory, Fort Knox, Kentucky.

8. Growth of streptomycin-sensitive and streptomycin-resistant strains of *Escherichia coli*. James T. Blackwell, Jr. and Ilda McVeigh, Biology Dept., Vanderbilt University, Nashville.

9. Chemical and serological relationship of colominic acid to group C (group II alpha) meningococcus hapten. Guy T. Barry and Tien Hu Tsai, University of Tennessee Memorial

Research Center and Dept. Bacteriology, University of Tennessee, Knoxville.

10. Uricolytic activity of a rumen coliform bacterium. C. Thornsberry and R. F. Wiseman, Dept. Bacteriology, University of Kentucky, Lexington.

11. The effect of a high concentrate diet upon rumen lactobacilli. R. F. Wiseman, D. R. Jacobson and W. M. Miller, Depts. Bacteriology and Dairy, University of Kentucky, Lexington.

12. The effect of *Salmonella pullorum* infection on the hematocrit values of chicks. Ronald LeClair, Dwight Lambe, Jr. and D. Frank Holtman, Dept. Bacteriology, University of Tennessee, Knoxville.

13. Further observations on the hemolysis of *Pseudomonas aeruginosa*. Pinghui V. Liu, Dept. Microbiology, University of Louisville, Louisville.

14. Lecithinase production by gram-negative bacteria. Pinghui V. Liu and Marie Esselman, Dept. Microbiology, University of Louisville, Louisville.

15. Preliminary electron microscopy of fragmenting and non-fragmenting aerobic actinomycetes. O. F. Edwards and M. Hotchkiss, Dept. Bacteriology, University of Kentucky, Lexington.

16. Some studies on the bacteriophages of *Clostridium perfringens*. Richard W. Sames, Dept. Biology, Bellarmine College, Louisville, Kentucky.

**Maryland Branch** (Regina C. Schneider, Secretary-Treasurer)

**October 8, 1959.** Maryland State Health Department, Baltimore, Maryland.

Active immunization against measles. Fred R. McCrumb, Division of Infectious Diseases, University of Maryland School of Medicine, Baltimore.

Immunological Aspects of staphylococcus. Leighton E. Cluff, Allergy and Infectious Diseases Clinic, Johns Hopkins Medical School, Baltimore.

**December 16, 1959.** Maryland State Health Department, Baltimore, Maryland.

Some recent advances in leprosy. Anthony J. Morris, National Institutes of Health, Bethesda.

Movie—Phagocytosis. Courtesy of Chas. Pfizer and Co., Brooklyn, N. Y.

**Michigan Branch** (Marvis Richardson, Secretary-Treasurer)

**December 5, 1959.** Hotel Whittier, Detroit, Michigan.

1. Diagnostic acids in hematology. Elsa S. Kumke, Wayne State University College of Medicine, Detroit.

2. Diagnostic procedures for *C. diphtheriae*. Norma Broom, Detroit Dept. Health, Herman Kiefer Hospital, Detroit.

3. A brief review of some basic parasitological diagnostic methods. Jack J. Stockton, Dept.

Microbiology, Michigan State University, E. Lansing.

4. Recent developments in the chemotherapy of parasitic infections. Paul Thompson, Research Laboratories, Parke, Davis & Company, Detroit.

5. Evaluation of a quantitative method for detecting and following urinary tract infections. J. P. Truant, Dept. Laboratories, Henry Ford Hospital, Detroit.

6. Practical diagnostic aspects of mycology. John M. Roberts, Diagnostic Microbiology Unit, Michigan Dept. Health, Lansing.

7. Studies on the therapy of experimental enterococcal pyelo-nephritis. Arvid L. Erlandson and Leola A. Gagliardi, Research Laboratories, Parke, Davis & Company, Detroit.

8. Diagnostic methods in whooping cough. Grace Eldering, Michigan Dept. Health, Grand Rapids.

9. A practical method for sterilizing contrangles. Barbara R. Lanning, Alex J. Drabkowski, and E. M. Britt, Wayne County General Hospital, Eloise.

10. Serologic investigation of autoantibodies in experimental tuberculosis. J. S. Widder and M. S. Rheins, Dept. Bacteriology, Ohio State University. Present address: Upjohn Company, Kalamazoo.

11. The ultraviolet absorption spectrum of staphylocoagulase. Hans Gadebusch, Veterans Administration Hospital, Ann Arbor.

12. Characteristics of staphylococcal L forms. L. H. Mattman, L. Tunstall, and H. W. Rossmore, Dept. Biology, Wayne State University, Detroit.

13. Modifications of steroids by fungi. Oldrich K. Sebek, Lester M. Reineke and Durey H. Peterson, Research Laboratories, The Upjohn Company, Kalamazoo.

14. The enhancement of alpha hemolysis by 3 amino 1-2-4 triazole. J. Trubey and H. W. Rossmore, Dept. Biology, Wayne State University, Detroit.

**Eastern Missouri Branch** (Alex. C. Sonnenwirth, Secretary-Treasurer)

**October 6, 1959.** Wohl Health Center, St. Louis, Missouri.

1. Studies on newcastle disease virus-host cell interaction using ultra-violet radiation. Donald Durand, Dept. Microbiology, School of Medicine, University of Missouri, Columbia, Missouri.

2. Preliminary experience with the KRP test. Nicholas Duffett, Virginia L. Pipe, and Harvey E. Altheide, Division of Health, Public Health Laboratories, St. Louis.

3. Interaction between human cells and adenoviruses. Valentin H. Bonifas, Dept. Microbiology, School of Medicine, St. Louis University, St. Louis.

**December 5, 1959.** Steinberg Auditorium, The Jewish Hospital, St. Louis, Missouri.

1. Keratinophilic fungi. Morris Moore, Homer Phillips Hospital, St. Louis.

2. Measles and leukemia. James Williams, Dept. Pediatrics, School of Medicine, St. Louis University.

3. The role of non-pigmented, coagulase-negative micrococci in the infections of the newborn. L. Laskowski, Mary Ann Pexa, Mary Ann Perry and James King, St. Louis University, School of Medicine and St. Mary's Group of Hospitals, St. Louis.

4. Observations on histopathological changes in HeLa cells infected with newcastle disease virus. M. Das and H. Goldberg, Dept. Microbiology, School of Medicine, University of Missouri, Columbia, Missouri.

5. Haptene induced leukocyte agglutination. M. Rigney and J. Barrett, Dept. Microbiology, School of Medicine, University of Missouri, Columbia, Missouri.

6. Hospital air-sampling studies. R. T. Evans and F. B. Engley, Jr., Dept. Microbiology, School of Medicine, University of Missouri, Columbia, Missouri.

7. Studies on a skin test for leptospirosis. H. Goldberg, P. Kuppuswamy and D. Blenden, Depts. Microbiology, School of Medicine and School of Veterinary Medicine, University of Missouri, Columbia, Missouri.

**New Jersey Branch** (Allen I. Laskin, Secretary)

**November 17, 1959.** Merck Sharp & Dohme Research Laboratories, Rahway, New Jersey.

Symposium: Recent Advances in Spore Metabolism and Germination.

Chairman: Brooks Church.

1. Introductory remarks. Brooks Church, Warner-Lambert Research Institute, Morris Plains, New Jersey.

2. Studies on the role of L-alanine on the germination of spores of *Bacillus cereus*. Harlyn D. Halverson, University of Wisconsin, Madison, Wisconsin.

3. Germination stimulants and enzyme systems concerned with their utilization in *Bacillus cereus*. Bernard J. Krask, Fort Detrick, Maryland.

4. Germination and host germinative growth of *Bacillus megatherium*. Hillel S. Levinson, Quartermaster Research and Development Center, Natick, Massachusetts.

**December 17, 1959.** Institute of Microbiology, Rutgers—The State University, New Brunswick, New Jersey.

Symposium: Microbiology in the Soviet Union and Her Satellites.

Chairman: William Charney.

1. Introductory remarks. William Charney, Schering Corporation, Bloomfield, New Jersey.



2. Microbiological travelog of the Soviet Union. Marvin Weinstein, Schering Corporation, Bloomfield, New Jersey.

3. Some general aspects of bacteriology in the Soviet Union. Wayne W. Umbreit, Rutgers University, New Brunswick, New Jersey.

4. Antibiotic screening programs in the Soviet Union and her Satellites. Richard Donovan, Squibb Institute for Medical Research, New Brunswick, New Jersey.

5. Microbiology at the Academy of Sciences of the U.S.S.R. Hubert A. Lechevalier, Institute of Microbiology, Rutgers University, New Brunswick, New Jersey.

**January 16, 1960.** Bristol-Myers Company, Hillside, New Jersey.

Symposium: Problems in Biological Assessment. Chairman: Alfred B. Kupferberg.

1. Introductory remarks. Alfred B. Kupferberg, Ortho Research Foundation, Raritan, New Jersey.

2. Pyrogen testing as an example of quantitative biology. A. Haldane Gee, Foster D. Snell, Inc., New York City, New York.

3. New Methods of sterility testing by use of the membrane filter. Charles P. Schaufus, Millipore Filter Corporation, Bedford, Massachusetts.

4. Evaluation of product sterility. John J. Mayernik, Merck, Sharp & Dohme, Rahway, New Jersey.

**February 18, 1960.** Ortho Research Foundation, Raritan, New Jersey.

Symposium: Scientific Session.

Chairman: Thomas Stoudt.

1. The activity of coenzyme Q and its analogs in the succinoxidase system. T. Cook and D. Hendlin, Merck Sharpe & Dohme Research Laboratories, Rahway.

2. The effect of oxogenous coenzyme Q on oxygen consumption by bacteria. H. Gregory and J. Hohnston, Dept. Bacteriology, Rutgers—The State University, New Brunswick.

3. Sulfonamide inhibition of folic acid synthesis in cell free systems. E. J. Merola, Dept. Bacteriology, Rutgers—The State University, New Brunswick.

4. Studies on lysogenesis in staphylococcus. W. Taylor, Dept. Bacteriology, Rutgers—The State University, New Brunswick.

5. A new method for the manipulation, maintenance and cloning of single mammalian cells *in vitro*. R. Kessel and W. Braun, Institute of Microbiology, Rutgers—The State University, New Brunswick.

6. Automation of the microbiological assay of antibiotics with an autoanalyzer instrumental system. T. A. Haney, J. R. Serke, J. Pagano, and A. Ferrari, E. R. Squibb & Sons, New Brunswick.

**Central New York Branch** (L. E. Bowers, Secretary-Treasurer)

**October 31, 1959.** Enterprise Grange, Oaks Corners, New York.

1. Aspects of starch metabolism of *Streptococcus equinus*. L. K. Dunican and H. W. Seeley, Div. of Bacteriology, Dept. Dairy Industry, College of Agriculture, Cornell University, Ithaca.

2. Liver monoamine oxidase as affected by enteric *Clostridium perfringens*. F. Rupp, A. W. Phillips and H. F. Niss, Biological Research Laboratories and Dept. Bacteriology and Botany, Syracuse University, Syracuse.

3. Microbiological changes in submerged soil. Ralph Mitchell and M. Alexander, Dept. Agronomy, Cornell University, Ithaca.

4. Use of molecular antagonism for microbial assay. Robert Guthrie, Dept. Pediatrics, Children's Hospital, University of Buffalo, Buffalo.

5. Studies on the nutrition of *Streptococcus bovis* in relation to dextran production. Isabel Barnes, P. J. Van Demark and H. W. Seeley, Div. of Bacteriology, Dept. Dairy Industry, College of Agriculture, Cornell University, Ithaca.

6. Inhibition of hexokinase by bacterial lipopolysaccharides. G. Blanchard, A. W. Phillips, H. F. Niss and T. Robinson, Biological Research Laboratories and Dept. Bacteriology and Botany, Syracuse University, Syracuse.

7. Area sterilization with beta-propiolactone. C. W. Bruch, H. G. Boucher, J. Mogenham and A. Bernreuther, Wilmot Castle Company, Rochester.

**Eastern New York Branch** (Dumont F. Elmen-dorf, Jr., Secretary-Treasurer)

**October 26, 1959.** New York State Department of Health, Albany, New York.

1. The induction of bronchial epithelial hyperplasia in hamsters by human cancerous bronchial secretions. Joseph Landau, Arthur Stein, and Samuel Powers, Jr., U. S. Veterans Administration Hospital and Albany Medical College, Albany.

2. The antigenic relationship between measles and canine distemper viruses. Donald C. Carpenter, John A. Armstrong, Edward M. Monthie, and Ernest J. Froelich, Sterling-Winthrop Research Institute, Rensselaer.

3. Variations in acridine orange staining of bacteria during growth. James Redman, Division of Laboratories and Research, New York State Department of Health, Albany.

4. The protein coats or "ghosts" of coliphage T<sub>2</sub>: their biologic and chemical functions. James Barlow, Division of Laboratories and Research, New York State Department of Health, Albany.

5. The location of noncytopathic myxovirus plaques by hemadsorption. John Hotchin, Rudolf Deibel, and Lois M. Benson, Division of Lab-

oratories and Research, New York State Department of Health, Albany.

6. Conjugation of an antifibrinogen with lissamine rodamine (B-200) and fluorescein isothiocyanate. Robert M. Coleman, Russell Sage College, Troy.

**New York City Branch** (A. C. Dornbush, Secretary)

**January 21, 1960.** Hotel Statler, New York City.

Luncheon address: "Immunization with living attenuated viruses with special reference to polio virus." Herald R. Cox, Lederle Laboratories, Pearl River, N. Y.

#### Section A

1. Effects of polyoxyethylene ethers in experimental protozoal infections. F. C. Goble, J. C. Boyd, and J. D. Fulton, Ciba Pharmaceutical Products, Inc., Summit, N. J. and National Institute for Medical Research, London.

2. Preliminary studies of the ecological relationship between *Candida albicans* and intestinal bacteria. H. D. Isenberg, M. A. Pisano, S. Carito, and J. I. Berkman, Long Island Jewish Hospital, New Hyde Park and St. John's University, Jamaica.

3. The prevalence of pneumococcal types and the continuing importance of pneumococcal infection. Robert Austrian, State University of N. Y., Downstate Medical Center, Brooklyn.

4. The significance of positive serological tests in patients with rheumatic and non-rheumatic diseases. J. J. Singer and C. M. Plotz, State University of N. Y., Downstate Medical Center, Brooklyn.

5. Corneal reactions to tuberculin in rabbits passively sensitized by leukocytes. Mary Tremaine, State University of N. Y., Downstate Medical Center, Brooklyn.

6. Antigenic properties of spermatazoa and seminal plasma. A. J. Weil, Bronx Hospital, N. Y.

7. Specific and non-specific immunity in cryptococcosis. D. B. Louria, Second (Cornell) Medical Division, Bellevue Hospital, N. Y.

8. Immunization of mice against cryptococcus. Irving Abrahams, Cornell University Medical College, N. Y.

9. The past, present and future of gnotobiotics and germ-free apparatus. M. H. Dalbow, Fisher Scientific Company, Pittsburgh, Pa.

#### Section B

1. A method for rupturing large quantities of microorganisms. R. L. Epstein, Warner-Lambert Research Institute, Morris Plains, N. J.

2. The use of folic acid antagonists in the isolation of thymine-requiring strains of *Proteus vulgaris* and *Lactobacillus casei*. Samuel Singer, The Wellcome Research Laboratories, Tuckahoe, N. Y.

3. Effect of pH on the degree of inhibition of *Lactobacillus arabinosus* 17-5 by antifolic acid drugs. Robert Ferone and R. C. Wood, The Wellcome Research Laboratories, Tuckahoe, N. Y.

4. Some metabolic changes accompanying resistance of *Streptococcus faecalis* to fluorinated pyrimidines. Alexander Bloch, Ingeborg Krapf, and Dorris J. Hutchinson, Sloan-Kettering Institute for Cancer Research, N. Y.

5. Genetic transforming activity in growing and in disintegrating pneumococcus populations. Elena Ottolenghi, The Rockefeller Institute, N. Y.

6. Transformation of resistance to 8-azaguanine in *Diplococcus pneumoniae*. F. M. Sirotnak and Ramona B. Lunt, Sloan-Kettering Institute for Cancer Research, N. Y.

7. Some parameters in *in vitro* chemotherapeutic screening. T. A. Herrmann and Marion B. Sherwood, The Wellcome Research Laboratories, Tuckahoe, N. Y.

8. An evaluation of various antibiotics against a *Mycoplasma gallinarum* (PPLO) infection in eggs. F. E. Popken, J. Clemente, and J. S. Kiser, American Cyanamid Co., Pearl River, N. Y.

9. Colistin, a new antibiotic I. *In vitro* microbiologic studies. F. H. Dondershine, J. A. Bon-tempo, and Rosa Zlatonoff, Warner-Lambert Research Institute, Morris Plains, N. J.

**North Carolina Branch** (Mary A. Poston, Secretary-Treasurer)

**November 21, 1959.** Bowman Gray School of Medicine, Winston-Salem, North Carolina.

1. Interaction of herpes simplex virus in human amnion. Suydam Osterhout, School of Medicine, Duke University.

2. Biochemical investigation of homeostatic cell culture. Kenneth McCarthy, School of Medicine, Duke University.

3. Studies on the *in vitro* cultivation of guinea pig phagocytic cells. Glen Watson, Bowman Gray School of Medicine, Winston-Salem.

4. Effect of antibiotics and antiserum on chronic infections of HeLa cells with meningopneumonitis virus. George J. Galasso and G. P. Manire, School of Medicine, University of North Carolina.

5. Effect of amino acid analogs on ammonium assimilation by *Pseudomonas*. W. E. Deturk, School of Medicine, Duke University.

6. Studies on the adsorption and replication of vaccinia virus in Earle's L cells. Kenneth O. Smith and D. Gordon Sharp, School of Medicine, University of North Carolina.

7. Studies of serum lysozyme, complement and properdin, and resistance to infection. Ernest W. Chick, VA Hospital and School of Medicine, Duke University.

8. Comparison between purified individual tuberculo-protein and the international standard tuberculin PPD-S. H. M. Vandiviere and Margaret

R. Vandiviere, Gravelly Sanatorium, Chapel Hill.  
Guest speaker (night session): Dr. Joseph Portnoy, Veneral Disease Experimental Laboratory, U.S.-P.H.S., and School of Public Health, University of North Carolina, Chapel Hill.

**Northeast Branch** (Alice T. Marston,  
Secretary-Treasurer)

**November 13, 1959.** Evans Memorial, Boston.

1. Motion picture. The effect of viruses on Detroit 6 cells.

2. Tissue culture techniques. Gordon Sato, Brandeis University, Waltham, Mass.

3. Motion picture. Hospital sepsis: a communicable disease.

4. Techniques in evaluation of hospital sepsis. Ruth B. Kundsén, Peter Bent Brigham Hospital, Boston.

Lecture: "Bacillary Dysentery." Samuel B. Formal, Div. Applied Immunol., Walter Reed Army Institute of Research, Washington.

**Ohio Branch** (Elizabeth Wilson, Secretary-Treasurer)

**November 21, 1959.** The Ohio State University, Columbus, Ohio.

*Review of Current Research Programs*  
Organization and Speaker

The Ohio State University, Columbus, J. M. Birkeland, Chairman Department of Bacteriology

Ohio Department of Health, Columbus, C. C. Croft Asst. Chief of Laboratories

The Jewish Hospital, Cincinnati, Jan Schwarz, Associate Director of Clinical Laboratories

Robert A. Taft Sanitary Engineering Center, PHS, Cincinnati, H. F. Clark, Chief, Water Quality Studies

Robert A. Taft Sanitary Engineering Center, PHS, Cincinnati, K. H. Lewis, Chief, Milk and Food Research

School of Medicine Western Reserve University, Cleveland, L. O. Krampitz, Chairman Department of Microbiology

1. Development and application of new bacteriophages for typing of staphylococci. D. C. Thomas and W. A. Altemeier. Department of Surgery, University of Cincinnati.

2. *In vitro* studies with precipitated staphylococcal toxins. J. E. Berger and E. O. Hill. Departments of Surgery and Biological Sciences, University of Cincinnati.

3. Transduction of antibiotic resistance in *Staphylococcus aureus*. P. A. Pattee and J. N. Baldwin. Department of Bacteriology, The Ohio State University, Columbus.

4. A vibrio causing enteritis in infants. Ann Perry and W. E. Wheeler, Children's Hospital, Columbus.

5. Anionic surface-active agents in domestic sewage and their effects upon waste treatment units. G. W. Malaney, W. D. Sheets and Judy Ayres, Department of Bacteriology and Water Resources Center, The Ohio State University, Columbus.

6. The Status of the public health bacteriologist in Ohio. M. J. Foter, Past-Director, S.A.B. Employment Bureau, Cincinnati.

**Eastern Pennsylvania Branch** (Elizabeth H. Fowler, Secretary-Treasurer)

**November 24, 1959.** Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania.

1. Morphological and biochemical comparisons of sporogenic *Bacillus cereus* with asporogenic mutants. George Beskid, Hahnemann Medical College, Philadelphia.

2. The role of phospholipids in the uptake of amino acids by lymph node cells. Herman Friedman, Albert Einstein Medical Center and William L. Gaby, Hahnemann Medical College, Philadelphia.

3. Coagulases and virulence in *Staphylococcus aureus*. Frank A. Kapral, School of Medicine, University of Pennsylvania, Philadelphia.

**January 26, 1960.** Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania.

Symposium: Microbiological problems in the food industry.

Convener: Walter L. Obold, Drexel Institute of Technology, Philadelphia.

1. The identification and role of indicator organisms in frozen foods. Karl Kereluk, Campbell Soup Company, Camden, N. J.

2. The role of psychrophilic bacteria in defrost spoilage of frozen foods. Arthur C. Peterson, Campbell Soup Company, Camden, N. J.

3. Microbiological aspects of hot food vending. Stanley Segall, Kwik Kafe Coffee Processors, Hatboro, Pa.

4. Microbiology of maple sap. Hilmer Frank, and C. O. Willits, Eastern Utilization Research and Development Div., A.R.S., Wundmoor, Pa.

**February 23, 1960.** Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania.

Scientific Program:

1. The role of phospholipids in amino acid transport. Ihor Zajac, Ronald Silberman and William L. Gaby, Department of Microbiology, Hahnemann Medical College, Philadelphia.

2. Antibiotic action and the bacterial surface. G. D. Shockman, The Institute for Cancer Research, Fox Chase, Philadelphia.

3. Demonstration of extracellular material associated with a strain of *Staphylococcus aureus*. T. Sall, S. Mudd, F. F. Nightingale and N. A. Vali, Department of Microbiology, University of Pennsylvania School of Medicine, Philadelphia.

**Puerto Rico Branch** (Maria Medina-Cermenio, Secretary-Treasurer)

**December 13, 1959.** Hotel La Concha, San Juan, P. R.

1. Biological effects of radiations. Rafael Marine-larena. Dept. Bacteriology, School of Medicine, San Juan, Puerto Rico.

**Rio de Janeiro Branch** (Pio Cesar de Lobao Portellada, Secretary-Treasurer)

**November 13, 1959.** A joint meeting with the Rio de Janeiro Section of the Sociedade Brasileira de Microbiologia, was held at Instituto Oswaldo Cruz.

The following papers were presented.

1. Treatment of generalized sporotrichosis with fungisone. José Lisboa Miranda, Instituto Oswaldo Cruz.

2. Ultrathin sectioning of bacteria. Mario Machado Sampaio, Niber da Paz M. Silva, Milton Thiago de Mello, Instituto Oswaldo Cruz.

3. Morphological aspects of cells and colonies of *E. coli* in different media. Niber da Paz M. Silva, Instituto Oswaldo Cruz.

4. Polivalent antigens for the diagnosis of salmonellosis. Gobert Araujo Costa and Luiz Mario J. da Motta, Instituto Oswaldo Cruz.

5. Mucoproteins in microorganisms. Regina Abreu and G. Villela, Instituto Oswaldo Cruz.

**South Central Branch** (John Schneidau, Jr., Secretary-Treasurer)

**December 11, 1959,** State Office Building, Civic Center, New Orleans, Louisiana.

1. Stability of *Anaplasma marginale* to physical environment: A preliminary report. David M. Bedell, Thomas E. Rogers and George T. Dimopoulos, Dept. Veterinary Science, L.S.U., Baton Rouge, Louisiana.

2. Studies on the purification of infrared spectra of various tissues: A preliminary report. Gene T. Schrader, George T. Dimopoulos and David M. Bedell, Dept. Veterinary Science, L.S.U., Baton Rouge, Louisiana.

3. Experimental yeast infections. Sah'l Mourad, Dept. Microbiology, Tulane University Medical School, New Orleans.

4. Some new aspects of the epidemiology of ringworm of the scalp. James T. Sinski, Dept. Microbiology, Tulane University Medical School, New Orleans, Louisiana.

5. The relationship of gestation to Bang's susceptibility. Varley F. Young and Rene J. Bienvenu, Dept. Biological Sciences, Northwestern State College and the Northwest Louisiana Disease Research and Diagnostic Laboratory, Natchitoches, Louisiana.

6. A possible explanation for susceptibility to brucellosis. James Hyde, Varley Young, and Rene

J. Bienvenu, Dept. Biological Sciences, Northwestern State College and the Northwest Louisiana Disease Research and Diagnostic Laboratory, Natchitoches, Louisiana.

7. Antigenic moieties of *Brucella abortus* 1279. Thomas Rogers, Paxton Willis and Rene J. Bienvenu. Dept. Biological Sciences, Northwestern State College, Natchitoches, Louisiana.

8. Is there poor coupling between the exergonic and endergonic reactions of azotobacter? Emmett J. Johnson and C. E. Clifton, University of Mississippi School of Medicine, Jackson, Mississippi, and Stanford University School of Medicine, California.

9. Some properties of a heat resistant inorganic pyrophosphatase from *Azotobacter agilis*. Emmett J. Johnson and Mary K. Johnson, University of Mississippi, School of Medicine and Millsaps College, Jackson, Mississippi.

10. Electron microscope observations on tissue culture cells and animals infected with polyoma virus. Lyman A. Magee, Clifford E. Grey and Leo Dmochowski, Dept. Microbiology, University of Mississippi School of Medicine, Jackson, Mississippi, and M. D. Anderson Hospital and Tumor Institute, Houston, Texas.

11. The atypical acid-fast bacillus: a diagnostic and clinical problem. Marion Hood, Dept. Pathology, Bacteriology Division, Charity Hospital, New Orleans, Louisiana.

12. Does *Thiobacillus ferrooxidans* utilize thio-sulfate? Arthur R. Colmer, Dept. Botany, Bacteriology and Plant Pathology, L.S.U., Baton Rouge, Louisiana.

**Southeastern Branch** (Louise R. Cason, Secretary-Treasurer)

**November 6, 1959.** Gunter Air Force Base, Montgomery, Alabama

1. Preliminary studies of bacterial utilization of methylpentoses. R. G. Eagon, and J. N. Adams, University of Georgia, Athens.

2. Effects of sodium and potassium ions on glycuronate utilization by a marine pseudomonad. W. J. Payne, University of Georgia, Athens.

3. The metachromatic granules of *Nocardia rubra*. J. N. Adams, and N. M. McClung, University of Georgia, Athens.

4. Variations in acid-fastness of *Nocardia asteroides*. I. Uesaka, and N. M. McClung, University of Georgia, Athens.

5. Systematic evaluation of certain identification characteristics of staphylococci. A. J. Nahmias, J. Hall, and P. Petty, Communicable Disease Center, Chamblee, Georgia.

6. Population changes of staphylococci after possible in vivo lysogenization. N. Sakura, E. L. Updyke, and A. J. Nahmias, Communicable Disease Center, Chamblee, Georgia.

7. Isolation and studies on bacteriophage lytic



for mycobacteria. J. C. Cater, and W. B. Redmond, Veterans Administration Hospital, Atlanta.

8. Isolation and study of a strain of *Mycobacterium butyricum* "cured" of a carried prophage. B. U. Bowman, Jr., and W. B. Redmond, Veterans Administration Hospital, Atlanta.

9. Isolation of a new alginomonas species from soil. J. P. Eller, and W. J. Payne, University of Georgia, Athens.

10. The role of the cell wall of brucella in immunity. J. W. Foster, and E. Ribi, University of Georgia, School of Veterinary Medicine, Athens.

11. Metallic ion antagonism of the antimicrobial activity of actinobolin. W. H. Graff, R. E. Pittilo, and F. M. Schabel, Jr., Southern Research Institute, Birmingham, Ala.

12. An adventure in antibiotics. T. F. Paine, Jr., University of Alabama Medical Center, Birmingham, Ala.

13. Epidemiological aspects of rabies. R. H. Sikes, Communicable Disease Center, Montgomery, Alabama.

14. Critical evaluation of samplers for intramural aerobiology. T. W. Kethley, and W. B. Cowen, Georgia Institute of Technology, Atlanta.

#### November 7, 1959

15. Survey of respiratory illnesses in a population. I. Viral studies. R. Q. Robinson, I. Hoshiwara, R. H. Gorrie, U. R. Moss, and E. W. Pepper, Communicable Disease Center, Montgomery, Alabama.

16. Survey of respiratory illnesses in a population. II. Bacteriological studies. H. Kaye, R. Q. Robinson, I. Hoshiwara, and A. R. Hall, Communicable Disease Center, Montgomery, Ala.

17. Survey of respiratory illnesses in a population. III. Fluorescent antibody techniques. T. R. Carski, I. Hoshiwara, W. B. Yarborough, and R. Q. Robinson, Communicable Disease Center, Montgomery, Alabama.

18. Preservation of mammalian cells by sub-zero storage. N. Gaillard, and R. W. Brown, Tuskegee Institute, Alabama.

19. Uptake of tubercle bacilli by HeLa cells in medium containing bovine fetal serum. M. E. Jones, and C. C. Shepard, Communicable Disease Center, Montgomery, Ala.

20. Bruised tissue—Humoral factors affecting the rate of healing. M. K. Hamdy, University of Georgia, Athens.

**Texas Branch** (Capt. Irving Davis,  
Secretary-Treasurer)

October 30-31, 1959, University of Houston, Houston Texas.

1. ATP-sulfurylase activity of certain strains of *Neurospora*. James B. Ragland and Rae S. Ragland. The Methodist Hospital and Dept. Bio-

chemistry, Baylor University College of Medicine, Houston.

2. Correlation of loss of photoreversibility of ultraviolet-induced mutation with deoxyribonucleic acid synthesis. C. O. Doudney and F. L. Haas, Dept. of Biology, The University of Texas M. D. Anderson Hospital and Tumor Institute, Houston.

3. The formate-pyruvate exchange reaction in *Streptococcus faecalis*. N. P. Wood and D. J. O'Kane, Agricultural and Mechanical College of Texas, College Station.

4. Succinate formation from acetate in microorganisms: A re-examination. G. R. Seaman, The University of Texas Medical Branch, Galveston.

5. Nucleic acid metabolism in glucose-starved *Escherichia coli*. Joan L. Countryman, Dept. Biology, The University of Texas M. D. Anderson Hospital and Tumor Institute, Houston.

6. Rapidly labeled fractions of ribonucleic acid in *Bacillus megaterium*. David H. Ezekiel, Dept. Biology, The University of Texas M. D. Anderson Hospital and Tumor Institute, Houston.

7. The consequence of metabolic alteration on macromolecular synthesis subsequent to irradiation. Daniel Billen, Dept. Biology, The University of Texas M. D. Anderson Hospital and Tumor Institute, Houston.

8. The microbial flora of petroleum flood waters. V. Carlson and E. O. Bennett, Dept. Biology, University of Houston, Houston.

9. The rate of growth of nitrifying bacteria in activated sludge. M. Truett Garrett, Jr. and Ted L. Stegant, Sewer Division, City of Houston, Houston.

10. Microbiology and buttermilk. M. A. Cross, Foremost Dairies, Houston.

11. Effect of sodium chloride on fat formation by certain gram-negative bacteria. Walter Sellers, Roland B. Mitchell and Harry M. Hughes, Dept. Microbiology-Cellular Biology and Biometrics, School of Aviation Medicine, Brooks AFB, Texas.

12. A permanently filamentous mutant of *Escherichia coli* B/r resistant to hexachlorophene. James E. Moyer, School of Aviation Medicine, Brooks AFB, Texas.

13. Pigment production by virulent and avirulent strains of *Bacillus anthracis*. Robert P. Williams and K. C. Chao, Dept. Microbiology, Baylor University College of Medicine, Houston.

14. A diffusible pigment produced by certain strains of *Staphylococcus aureus*. Joseph A. Bass and W. F. Verwey, The University of Texas Medical Branch, Galveston.

15. Determination of broad spectrum antibiotic content of blood serum with *Bacillus cereus* var. *mycoides*. H. J. Eoff, R. E. Davis, F. M. Farr and J. R. Couch, Depts. Poultry Science, and Bio-



chemistry and Nutrition, Texas Agricultural Experimental Station, College Station.

16. Bacterial invasion of tissues of monkeys following lethal irradiation with gamma rays. Anna C. Garner, E. Staten Wynne, Walter M. Sellers and James E. Moyer, Depts. Microbiology-Cellular Biology, School of Aviation Medicine, Brooks AFB, Texas.

17. The uptake of erythromycin by sensitive and resistant bacteria. Larry A. Renshaw and W. F. Verwey, The University of Texas Medical Branch, Galveston.

18. Factors influencing virulence of staphylococci in mice. R. D. Higginbotham and Joseph A. Bass, The University of Texas Medical Branch, Galveston.

19. Virus propagation in suspended cell cultures. Sidney Halpern and S. Edward Sulkin, Dept. Microbiology, The University of Texas Southwestern Medical School, Dallas.

20. The propagation of psitticosis agents in tissue culture. Morris Pollard and Toh Tanami, The University of Texas Medical Branch, Galveston.

21. Further observations on echo 9 and coxsackie B infections. Alice Conklin, Beverly Allen and J. V. Irons, Texas State Dept. Health, Austin.

22. Recognition of accidental laboratory acquired influenza. Alex Canales, Julian Feild, James E. Grimes and J. V. Irons, Texas State Dept. Health, Austin.

23. Antigen localization and reticulo-endothelial cell participation in active anaphylaxis in mice. Paul Donaldson and Susan J. Allen, Dept. Microbiology, The University of Texas Southwestern Medical School, Dallas.

24. Investigation of mechanisms of enzyme-antibody interaction (alcohol dehydrogenase-rabbit antiserum system). H. Redetzki, The University of Texas Medical Branch, Galveston.

25. Diagnosis of pertussis by fluorescent antibody staining of nasopharyngeal smears. Jo Anne Whitaker and Paul Donaldson, Depts. Pediatrics and Microbiology, The University of Texas Southwestern Medical School, Dallas.

26. A tuberculostatic factor in immune sera of guinea pigs. I. Kochan and S. Raffel, Wadley Research Institute, Dallas.

27. Properties of a bacteriostatic factor for tubercle bacilli in immune sera of guinea pigs. I. Kochan and S. Raffel, Wadley Research Institute, Dallas.

28. The potentiating effect of hydrocortisone acetate and tetracycline on monilial infections in

mice. B. Henry and W. Fahlberg, Baylor University College of Medicine, Houston.

**Virginia Branch** (Catherine M. Russell, Secretary-Treasurer)

**October 8, 1959;** Medical College of Virginia, Richmond, Virginia.

The fall meeting was held in conjunction with the Virginia public Health Association, Laboratory Section.

Symposium: Staphylococci Phage Typing.

Moderator: Herbert Welshimer, Medical College of Virginia, Richmond.

Panelists: Miles Hench, Medical College of Virginia, Richmond.

Holmes Knighton, Medical College of Virginia, Richmond.

Miss Esther Figuly, State Health Laboratory, Richmond.

Harry Snyder, Norfolk Health Laboratory, Norfolk, Virginia.

**Washington, D. C. Branch** (Charlotte C. Campbell, Secretary-Treasurer)

**December 3, 1959.** Walter Reed Army Medical Center.

The annual dinner meeting was held at the Officers' Club, Walter Reed Army Medical Center.

The after dinner address entitled "Growing Pains" was given by Raymond W. Sarber, Executive Secretary, Society of American Bacteriologists.

**January 26, 1960.** Walter Reed Army Institute of Research.

1. Delayed utilization of folic acid (PGA) by *Lactobacillus arabinosus*—Noel R. Krieg and Michael T. Pelczar, Dept. of Microbiology, University of Maryland, College Park, Md.

2. Turbidimetry in characterizing the growth of *Leptospira pomona*. H. C. Ellinghausen, Bacteriological Investigations, National Animal Disease Laboratory, A.R.S., U. S. Dept. of Agriculture, Agricultural Research Center, Beltsville, Md.

3. Studies on infectious agents in infant diarrhea: Serological behavior of non-pathogenic *Escherichia coli*. V. M. Young, M. R. Sochard, H. C. Gillem, and S. Ross, Dept. of Bacteriology, Walter Reed Army Institute of Research, Walter Reed Army Medical Center.

**February 23, 1960.** Walter Reed Army Institute of Research.

Speaker: John D. MacLennan, George Washington University School of Medicine. "The toxic nature of clostridial enzymes."

## BOOKS AND REVIEWS

**Albert Jan Kluyver: His Life and Work**, A. F. Kamp, J. W. M. La Riviere and W. Verhoeven, Editors: Interscience Publishers, Inc., 1959, 566 pp., \$11.00.

**Progress in Industrial Microbiology**, D. J. D. Hockenhull, Editor, Ulverston: Interscience Publishers, Inc., 248 pp., \$8.00.

**Atlas of Bacterial Flagellation**, Einar Leifson, Wheaton, Illinois: Academic Press, Inc., 1960, pp. 171, \$7.00.

**Annual Review of Microbiology, Volume 13**, C. E. Clifton, S. Raffel and M. P. Starr, Editors, Palo Alto: Annual Reviews, Inc., 1959, 553 pp., \$7.00.

A prior report has established that "... It takes all the running you can do to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that."<sup>1</sup> Few quantitative data are available on the amount of running the microbiologist must do to keep up with an ever-growing literature. A unique opportunity to carry out precise measurements of running values was recently afforded when *Annual Review of Microbiology*, Volume 13, (1959) was sent to this laboratory for review. The following study was thereupon undertaken to analyze all the volumes of *Annual Review of Microbiology*.

### Materials and Methods

Literature citations were determined in each volume by adding together the total number of references at the end of each section on an adding machine (Underwood, Sunderstrand Model). Weights of each volume were established on a Pelouze Postal meter (Model Y-10). Words-per-page values were measured by counting.

### Results and Discussion

The basic data are summarized in Figure 1. There appears to be considerable variation in both the number of literature citations and volume weight but a general upward drift in both values is evident. The data also suggest a periodicity which is difficult to explain. In early phases of the study a relationship with the periodic appearance of sun spots was thought to be evident but later data did not bear out the hypothesis. It should be pointed out that the figures for literature citations are probably much lower than the actual literature reports perused by individual reviewers since almost to a man some restriction of subject matter

has been forced upon each reviewer by space limitations. Furthermore the number of words per page has increased from 375 in Volume 1 to 545 in Volume 13 so that the running rates implied by data for more recent volumes are probably low estimates at best.

Despite variations in weight and literature coverage no variation in the uniformly high quality could be found among the volumes studied. Volume 13, like its predecessors, is a tool of considerable worth in any microbiology laboratory and is destined to become as well-thumbed as earlier volumes. Running to the literature has become a major problem and the contributors and editors of *Annual Review of Microbiology* are to be commended for aid they have provided the harried scientist in the library phases of his work.

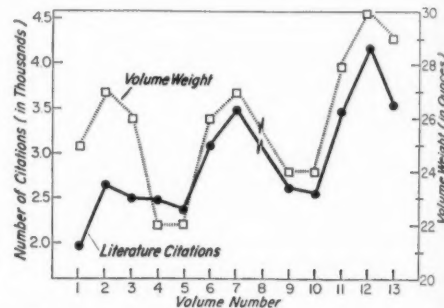


FIG. 1. Literature citation and volume weights of *Annual Review of Microbiology*.

The editors are also to be commended for the overall thoroughness with which so many areas of microbiology have been reviewed. Quite apart from those fields which are in violent ferment at the moment, areas of microbiology where the nature of the beasts dictate a slower pace are given their due in excellent reviews. Witness, for example, *Unicellular Clocks* (J. W. Hastings, Vol. 13), *Bats, and Their Relation to Rabies* (J. B. Enright, Vol. 10), and *Prediction of Plant Disease Epidemics* (P. R. Miller and M. J. O'Brien, Vol. 11).

Volume 13 is a worthy addition to the series. Microbiologists have to run very fast indeed to get somewhere else—twice as fast is probably a minimal value.

R. E. KALLIO

**Basic Bacteriology and its Biological and Chemical Background**, Second Edition, Carl Lamanna and M. Frank Mallette, Baltimore: The Williams & Wilkins Co., 1959, 833 pp., \$13.50.

<sup>1</sup> The Red Queen. 1871 The garden of live flowers. In *Through the Looking Glass*. By L. Carroll. Books, Inc., New York.

The appearance of the second edition of this book, again written at an intermediate level, will certainly be welcomed by those who have had occasion to use the popular first edition. No major changes have been made in the format or content of the new edition, which has about 25 per cent more pages and is printed throughout on glossy paper. Most of the new material concerns findings made during the six years since publication of the first edition. The chapter on the structure of bacteria, for example, has twice the number of pages as the chapter in the first edition, and the chapter on bacterial metabolism also contains many changes, reflecting the intense research activity in these areas of microbiology during this interval of time.

The number of references, including titles, at the end of each of the fourteen chapters has been considerably increased; many 1957 citations with an occasional one for 1958, can be found. These excellent lists of references could be made more useful to the reader if the authors cited representative papers concerned with findings on important topics more often in the text.

Another change in this edition is the absence of the four enlarged reproductions of text diagrams on metabolism which were formerly placed on separate sheets in a pocket inside the back cover. The original small text diagrams have been modified and made larger in this edition so that the absence of the inserts is not particularly missed.

In a book of this type, which encompasses a tremendous area, it is not surprising to find that there are some areas where information was either omitted or under-emphasized. In the chapter on microbial metabolism, for example, one can find no mention made of the enzymes polyribonucleotide phosphorylase or deoxyribonucleic acid polymerase in the section on nucleic acids other than a casual comment that "enzymes catalyzing the condensation of nucleotides have been studied to some extent and may operate by way of nucleoside di- or tri-phosphate rather than monophosphates." This is a rather sketchy handling of an important topic such as biosynthesis of nucleic acids. Similarly there is not enough emphasis placed on our knowledge, incomplete as it is, of the mechanism of protein biosynthesis. Although a number of pathways of glucose catabolism in microorganisms have been described, there is no mention made of the Entner-Doudoroff pathway. On the other hand, it must be admitted that one may find in this text coverage of subjects, especially in non-biochemical aspects, that are absent in most other texts.

Although this book is not supposed to cover the area traditionally assigned to medical microbiology, it is still somewhat surprising to find so little reference made to topics related to medical

microbiology. Perhaps the artificial barriers of subject matter in microbiology would disappear more rapidly if books such as this would consider at least some of these problems. Thus the material on the directed design of chemotherapeutic agents, which is found thinly spread amongst several chapters in the book, could be partially consolidated and expanded. Similarly, topics such as mode of action of bacterial toxins on the host could advantageously be considered by the authors.

Such inevitable questions of balanced coverage and the relatively few errors in the book do not detract from its general excellence. One of the reasons this reviewer appreciates the volume is because the authors have done more than simply compile facts. Principles are often well emphasized and areas where our knowledge is absent, incomplete, or conflicting have been so indicated. In addition, the authors have not been afraid to make some intelligent guesses at the right answers to problems where the answers are not yet known. These attitudes are excellent, especially for graduate students, who are too often confronted with texts which present material in a firm "this is it" manner with no attempt made to indicate the possible limitations of conclusions or to stimulate their thinking and experimenting about problems that still remain to be answered. It is this heuristic tenor that perhaps most of all distinguishes this fine text book.

H. J. BLUMENTHAL

**Bigger's Handbook of Bacteriology**, 7th Edition, F. S. Stewart, Baltimore: The Williams & Wilkins Company, 1959, 611 pp., \$8.00.

In the preface to the first edition, published in 1924, the author, Dr. Joseph W. Bigger, states: "This volume is the outcome of the dissatisfaction with existing books, frequently expressed by students to the author." The complaint has been that textbooks are so voluminous that the student can neither master the contents nor distinguish the more important from the less. Consequently, for examination purposes he relies "on grinders notes and cram books." The book is intended primarily for students of medicine and medical practitioners who have not specialized in bacteriology. Therefore, the author has presented the practical aspects of the subject while reducing theory to a minimum. Stress is placed on the fact that bacteria are important to the physician because they are causes of disease rather than because they are important in themselves.

The author of the 7th edition, Dr. F. S. Stewart, has made an extensive revision of this book, while seriously attempting to achieve the objective set by Dr. Bigger. Rapid and far-reaching advances in microbiology have made it necessary to rewrite some chapters and introduce new ones. Thus, new

sections have been added on virology and chemotherapy. New and almost completely new chapters have been written on disinfection, antigens and antibodies and antigen-antibody reactions, hypersensitivity, bacterial classification, streptococci and coliform bacteria; in fact, no part of the book remains without extensive revision. Only about one quarter of the material contained in the 6th edition has been retained unchanged.

The first eighty pages of the book deal with general basic principles of bacteriology, including disinfection and sterilization. With few exceptions, the nomenclature employed is that found in *Bergey's Manual of Determinative Bacteriology*.

Antibacterial agents used in chemotherapy are discussed in Chapter X, classification of bacteria in Chapter XII, and changes induced in bacteria by bacteriophages in Chapter XLIV. The rest of the book deals with medical bacteriology, virology, serology and immunology.

The book is well written and contains many excellent illustrations. The type and printing are good. Thus, the objective set by Dr. Bigger, namely to produce a practical text book for students of medicine, has been achieved.

H. J. STAFSETH

**Biophysical Science—A Study Program**, J. L. Oncley, Editor-in-Chief, Cambridge, Mass.: John Wiley & Sons, Inc., 1959, 568 pp., \$6.50.

Fortunately for biophysical science there has been almost unanimous disagreement among biophysicists in defining the boundaries of their collective field. The lack of a concise descriptive definition has allowed research to expand in whatever direction was needed and has in effect defined the science by the work in progress. Nowhere is this lack of restriction more evident than in the current volume. During the summer of 1958 a group of about 120 scientists actively engaged in research in biophysics were invited by the Biophysics and Biophysical Chemistry Study Section of the National Institutes of Health to participate in a study program in Biophysical Science with the objective of blending the methods and principles of the physical and life sciences in the investigation of biological problems. The Study Programs was built around a core of about 60 formal technical reports and it is these reports, somewhat abridged, which constitute the present work. The same material has been published in *Reviews of Modern Physics*.

The material presented is not intended to define the field of biophysics. Indeed, F. O. Schmitt in his introductory remarks points out the failure of the Study Program and of biophysics in general to give proper weight to either theoretical biology or the study of biological "systems"; i.e., the observation of biological interaction at all levels of complexity in the normal environment. It may be

that the "analytical" method, i.e., the isolation and study of pure collections of biological subunits, which is the major concern of the Study Program and which has led to the many recent advances in life science must precede both of the above approaches. In any event, the subject matter of the Study Program reflects the general situation in the field where both the theoretical and "systems" approaches receive little attention. Unfortunately, the same cannot be said for many aspects of the biophysical studies of viruses. The concepts and methods of the large and active group working in this area are not adequately represented in the Program.

Specific areas in biophysical science covered in the Study Program are:

Cellular Biology. Physical and Chemical Characteristics of Macromolecules. Energy Transfer and Biochemical Synthesis. Genetics and Replication of Proteins and Nucleic Acids. Biological Effects of Radiation. Molecular Organization and Function of Cells. Connective Tissue and Muscle. Nerve. Sensory Reception and Signal Processing. Specificity in the Chemical Control of Biological Systems.

Much of the material is fundamental in nature and succeeds in achieving the goal of the editors; the broadening of the common language of biologists, chemists and physicists.

Microbiologists will find the first six topics of particular interest. In these sections the familiar cell and many of its components are studied by means not ordinarily used by the biologist and an attempt is made to describe the interactions in the relatively precise terms of the physicist. The results are interesting and thought-provoking.

This volume is not for the beginning student in biology. But to the graduate student and the senior research man and teacher the reports and more than 1700 references should prove to be a valuable reference and source book.

FRANK B. BRANDON

**The Interference Microscope in Biological Research**, A. J. Hale, Baltimore: The Williams & Wilkins Co., 1958, 396 pp., \$10.75.

The development in the late 1940's of a practical interference microscope placed in the hands of the bacteriologist, cytologist, and cell physiologist a unique and valuable research tool. With this instrument interference contrast, an effect similar to phase contrast, is produced by recombination of two beams of light from a single source, one of the beams being modified by passage through the specimen. With white light illumination, structural details of the specimen are seen in variable color contrast in the interference microscope, even though the specimens themselves are unstained. This attribute is of particular importance in examination of living cells and tissues. With monochromatic light, measurements of the optical



path differences may be made, so that if either the refractive index or the thickness of the specimen is known, the other may be determined.

In his book Dr. Hale outlines the fundamental principles of interferometry and describes the several methods presently used to produce interference contrast with the microscope. Since there are now commercially available three interference microscopes, each based on a different system, the prospective purchaser would do well to review the advantages and limitations of the several instruments as presented in this book in order to select the microscope best suited to his particular needs.

Dr. Hale discusses the theoretical basis of measurements of mass, thickness, and concentration with the interference microscope and outlines the procedures to be followed in making such determinations. While his explanations are lucid and adequately detailed, Dr. Hale's book may serve the biologist better as a source of background information than as a practical manual for use with the microscope, particularly for the biologist whose knowledge of and interest in optics and microscopy is limited to practical applications. The anticipated and well-warranted wider usage of the interference microscope in the biological laboratory, however, makes the availability of a fundamental text like Dr. Hale's book a welcome and significant addition to the bibliography of microscopy.

BURTON WILNER

#### **Synthesis and Organisation in the Bacterial Cell,**

Ernest F. Gale, New York: John Wiley and Sons, Inc. 1959. 110 pp., \$3.50.

A little monograph like this serves a handy purpose. It gives a concise story of the research plan and progress of one laboratory. It can be read nicely in an evening. And its publication and wide distribution can be underwritten by the sponsoring CIBA corporation at a cost that, like mercy, is "twice blessed".

The story that Ernest F. Gale tells is pertinent and authoritative. He began working on biosynthesis and correlating it with cellular organization long before the current popularity of such efforts. The Unit for Chemical Microbiology, which he heads at Cambridge, has made sound contributions in a number of seemingly diverse areas. What is remarkable is that all tie in to a central theme of biosynthesis, which Gale relates in this book. Seldom does he have to leave his own group for documentation of his major points.

Knowledge on the synthesis of macromolecules is such that Gale's story is unfinished. The present state of progress is described with an initial lecture on structure and organization in the bacterial cell. In this, he examines those parts especially involved in biosynthesis but in so doing provides

an excellent précis of modern cytology. In the second lecture-chapter, he writes about amino acid incorporation and leads to his recent investigations on still unknown incorporation factors. Bacteriologists will have their fancy struck especially by his account of Kerridge's imaginative study of flagellin synthesis, a case where the formation and even function of a protein, albeit incomplete protein, can be seen in a microscope. The third lecture covers the biochemical nature of nucleic acid and protein synthesis and ends up with a multi-arrowed diagram which "like all good schemes hinges on the properties of unknown substance X". This last chapter, and in fact the whole book, is written refreshingly free of the usual gumbo. A common chemist or even a common bacteriologist can assimilate it without pain or strain.

PHILIPP GERHARDT

**Ward and Whipple's Fresh-Water Biology**, 2nd Edition, W. T. Edmondson, Editor, Seattle: John Wiley & Sons, Inc., New York. Chapman & Hall, Limited., London, 1959, 1248 pp., \$34.50.

The revision of Ward and Whipple's *Fresh-Water Biology* has been a redoubtable enterprise, indeed. The first edition, published in 1918, is still being used in many quarters as the principal and most comprehensive textbook in biological limnology available; however, for many years it has been considered as useless in identifying the North American fresh-water biota. The aquatic biologist will recognize that the incorporation of scientific information evolved since 1918 into a publication as broad in scope as the first edition of Ward and Whipple would have stretched book size and publication costs beyond the practical limits.

W. T. Edmondson, the editor of the second edition and his collaborators very wisely chose to direct their efforts toward the development of a comprehensive taxonomic guide to the biota of North American inland waters. The result is an authoritative and highly usable *handbuch* worthy of the attention of fresh-water biologists everywhere.

The long-awaited second edition of Ward and Whipple's *Fresh-Water Biology* essentially is a new manual embodying modern principles of systematics as well as current taxonomic nomenclature which requires rather substantial knowledge of aquatic biology on the part of the user. Nevertheless, it will be useful not only to systematists and limnologists, but to fisheries specialists and sanitarians. Generally, the chapters consist of introductory sections, followed by well-illustrated keys, hierarchical in approach. It would have been quite helpful to the advanced student if the keys to all groups had followed a hierarchical arrange-



ment. Certain groups, however, as for example the key to the bacteria, follow more empirical but nevertheless, readily described characters.

With the exception of a relatively few "committed" specialists, most systematists will accept the keys as authoritative. Dr. Edmondson is to be congratulated for his selection of contributors. The list of authors in this edition compares very favorably with the contributors to the first edition, and indeed two of the original contributors have revised their chapters for the second edition.

The second edition of Ward and Whipple's *Fresh-Water Biology* omits descriptions of the internal parasites, the free-swimming cercaria larvae of the trematoda, the spiders, and aquatic vertebrates (which were superficially described in the first edition). On the other hand, the second edition contains very adequate keys to the fungi, the bryophytes, the vascular plants, tardigrades, and polychaetes. Especially noteworthy is the description of the bacteria by C. B. van Niel and R. Y. Stanier. This chapter, preceded by the Introduction to the protista by R. Y. Stanier, provide the user with a modern key, and in addition with a phylogenetic and ecological insight into aquatic microbiology beyond the professional

requirements of sanitary engineers, in contradistinction to Chapter IV of the first edition, by E. O. Jordan. One can only hope that these chapters will stimulate interest with regard to the role of bacteria in primary productivity in fresh-water bodies, (and in the oceans).

Aside from the reviewer's general acceptance of the second edition of Ward & Whipple's *Fresh-Water Biology* as a major addition to the aquatic biologist's *armamentum*, he is left with the following observations:

1. Ward & Whipple, the appellation employed by two generations of aquatic biologists to describe the first edition of *Fresh-Water Biology* has been superseded by a much more useful but less general publication aimed at the professional aquatic biologist rather than the student or devoted amateur.

2. Aside from environmental and/or geographic specializations, the roots of modern marine biology and so-called biological oceanography still are deeply buried in the intellectual substrate supplied by several generations of American fresh-water biologists.

SIDNEY GALLER

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